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PREPRINT

DECAMETER-WAVE RADIO OBSERVATIONS OF JUPITER

Apparitions of 1965 to 1969

J. K. ALEXANDER

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GODDARD SPACE FLIGHT CENTER
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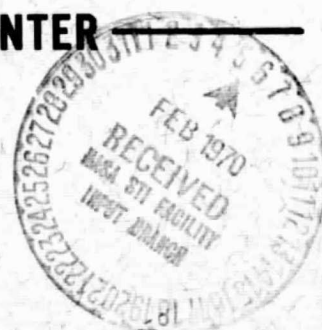
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DECAMETER-WAVE RADIO OBSERVATIONS

OF JUPITER

Apparitions of 1965 to 1969

by

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ABSTRACT

Systematic observations of the decameter-wave radio emissions from Jupiter obtained by a network of monitoring stations operated by the Goddard Space Flight Center have been analyzed for the period November 1965 to June 1969. A total of 4041 hours of observations at 16.7 MHz and 5514 hours of observations at 22.2 MHz from five different sites have been catalogued, and the Universal Times for each observing period and activity period are listed by frequency and station. A summary of the occurrence statistics as a function of System III Central Meridian Longitude and phase of the satellite Io is also shown.

Systematic observations of the decameter-wave radio emissions from Jupiter have been made since November, 1965, at a number of stations operated by the Goddard Space Flight Center. A general description of the Jupiter Monitor Network instrumentation and a summary of preliminary analyses of data from the 1965 and 1967 apparitions have already been published (Alexander, 1966, 1967). All data from November 1965 to June 1969 have recently been re-examined and a summary of those observations is given in this report. A more detailed analysis of the measurements, comparison with other observations, and interpretation of the results are in preparation for a separate publication.

Each monitoring station consists of a simple two-element, lobe-sweeping interferometer having an East-West baseline of approximately 2000 feet. The interferometer elements are five-element Yagi antennas equatorially mounted atop 30-ft. telephone poles. Observations are made at 16.7 and 22.2 MHz, and the Yagis for both frequencies are mounted on the same boom. The antennas are connected via coaxial cable transmission lines (approximately 10 db attenuation) to lobe-sweeping radiometers which feed a pair of synchronous phase detectors at each frequency to provide both "sine" and "cosine" outputs for recording. A "riometer" output derived from the average antenna temperature for a single Yagi at each frequency is also recorded. A sample data recording is shown in Figure 1.

The monitoring stations are located at Goddard Space Flight Center (Greenbelt, Maryland), Clark Lake Radio Observatory (Borrego Springs, Calif.) and at Manned Space Flight Network stations in Kauai, Hawaii; Carnarvon, Australia; and Grand Canary Is., Spain. A summary of the observations suitable for analysis is given in Table 1. The relatively small span of data available from some sites is due primarily to operational problems such as high interference levels and equipment malfunctions.

The procedure for analyzing the records was as follows. The Yagi antennas can be programmed to automatically track Jupiter from an hour angle of -6 hr. to +6 hr., and when the antennas are operating in their tracking mode useful observations can be obtained for up to twelve hours per day if there is no interference. On occasions when the antennas were not tracking but were fixed at the meridian, observations were confined to periods when Jupiter was within +3 hr. of meridian transit. The general criteria for useful observations, therefore, were (1) that the antennas were pointed within three hours of the hour angle of Jupiter, (2) that there was no evidence of radio interference and (3) that the hourly calibration marks and routine daily tests indicated proper equipment operation. Later intercomparisons of data from different stations provide a further test of the credibility of data from a given site.

Frequency	Station	Date	Total Observations		Ave.Obs. Hr/Day	Ave.Occ. Probability
			Days	Hrs		
22.2 MHz	Goddard	11/65-4/66	96	264.9	2.75	0.085
	"	10/66-3/67	117	445.9	3.81	.071
	"	9/67-4/68	190	1088.9	5.73	.060
	"	11/68-6/69	191	1167.4	6.11	.037
	Clark Lake	2/69-5/69	85	431.3	5.07	.015
	Hawaii	11/67-5/68	131	833.3	6.36	.042
	Carnarvon	9/66-1/67	106	428.2	4.04	.043
	"	9/67-5/68	167	854.9	5.12	.022
16.7	Goddard	11/65-4/66	118	590.6	5.00	.241
	"	10/66-3/67	134	604.1	4.51	.218
	"	9/67-4/68	162	823.4	5.08	.166
	"	11/68-5/69	148	694.7	4.69	.081
	Clark Lake	12/66-3/67	55	278.8	5.07	.190
	Hawaii	11/67-3/68	81	381.6	4.71	.156
	Carnarvon	9/66-1/67	32	128.9	4.03	.143
	"	8/67-5/68	82	162.0	1.98	.144
	Canary Is.	10/68-4/69	135	376.8	2.79	0.069

TABLE 1

Those portions of the data judged to be useful observations were divided into five-minute intervals of U.T., and each five-minute interval classified as containing or not containing Jupiter activity. To be classed as Jupiter activity, an event had to show the proper interferometer fringe pattern on both

the sine and cosine phase channels at a given frequency and have an amplitude of at least three times the rms system noise. Since the period of the interferometer fringes is about 6 min., isolated events of duration less than about 5 min. were not included in lists of Jupiter activity. Each event was classified, according to the degree of confidence in its identification, as (1) "possible" (2) "probable" or (3) "definite" Jupiter activity. Only events of ID class 2 or 3 were included in subsequent analyses. Since, unfortunately, the sensitivity of the interferometers varies from station-to-station, the minimum detectable flux is not the same at all sites. At the Goddard site the limiting flux density for Jupiter activity is about $2 \times 10^{-22} \text{ W/m}^2/\text{Hz}$. At the other stations, the minimum flux density is between 5×10^{-22} and $10^{-21} \text{ W/m}^2/\text{Hz}$.

The combined data from all stations and all dates are shown in Figure 2 through 5 where we have plotted the periods of activity and observations at 16.7 and 22.2 MHz in the System III Central Meridian Longitude - Io phase plane. The general features of the activity diagrams are quite similar to the plots of the University of Colorado data for the same period of time (Warwick and Dulk, 1968). Individual occurrence probability plots are given as a function of Central Meridian Longitude in Figure 6 and 7 and as a function of the departure of the satellite Io from superior geocentric conjunction in Figure 8 and 9.

Table 2 is a catalog of the data used to compile the plots shown in Figures 2-9. The observations are listed as a function of frequency and observing station. For each U.T. day the observing periods are given to the nearest five minutes of U.T. along with the corresponding ranges of CML III and Io phase. These are followed by the times of Jupiter activity, also to the nearest five minutes of U.T., and the range of CML III and Io phase for the activity.

ACKNOWLEDGEMENTS

The operation of the Jupiter Monitor Network and the subsequent reduction of the observations are due to the efforts of a group of people so large and varied as to make acknowledgment of individual contributions impossible. The lobe-sweeping radiometer systems were designed and built under the direction of Dr. J. N. Douglas while at Yale University. The operation of the Goddard station and overall co-ordination of technical problems for the network have been the responsibility of Mr. Wm. Baur. Installation and operation of the sites at Hawaii, Carnarvon, and Canary Is. are the result of splendid assistance and co-operation by Manned Space Flight Network personnel both at Goddard and at the individual sites. Computer programs used in the data analysis were prepared by Miss Carole Lublow and Mr. M. L. Kaiser. Special thanks go to Mrs. Sue Vaughan who assisted with the data reduction and kept track of thousands of punched cards and hundreds of rolls of strip charts. To all these contributors and the many more left unnamed, the author expresses his sincere appreciation.

TABLE 2

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III		22.2 GODDARD SPACE FLIGHT CENTER IO PHASE		TIME(UT) HHMM - HHMM		ACTIVITY CML III		IO PHASE	
65/11/11	0450 - 1045	100.3 - 215.0		157.5 - 248.7		0305 - 0935		218.2 - 272.6		225.3 - 238.1	
65/11/12	0700 - 1120	325.6 - 126.8		55.9 - 95.6		1045 - 1120		105.6 - 126.8		95.7 - 95.6	
65/11/13	0735 - 1040	141.4 - 253.3		258.3 - 294.4							
65/11/14	0745 - 1040	258.2 - 44.0		112.4 - 137.3							
65/11/15	0610 - 1035	31.4 - 151.6		303.4 - 340.6							
65/11/16	0730 - 1030	230.4 - 359.3		157.8 - 183.4							
65/11/17	0705 - 1025	6.0 - 126.9		357.9 - 26.0							
65/11/18	0710 - 0900	159.7 - 226.2		202.5 - 218.2		0930 - 0855		208.1 - 223.2		213.9 - 217.5	
	0910 - 1020	232.3 - 274.6		219.6 - 229.5							
65/11/19	0710 - 1015	210.4 - 62.3		45.5 - 71.5							
65/11/20	0815 - 1010	140.4 - 209.9		259.1 - 275.4							
65/11/21	0710 - 1005	251.8 - 357.6		92.6 - 117.4		0740 - 0755		269.9 - 279.0		96.8 - 99.7	
65/11/22	0555 - 0620	357.1 - 12.2		266.5 - 267.0							
	0650 - 1000	30.4 - 145.2		254.2 - 320.9							
65/11/23	0410 - 1000	54.3 - 255.9		114.4 - 164.3		0810 - 0905		259.4 - 262.7		149.6 - 156.4	
						0920 - 0930		271.7 - 271.8		158.6 - 160.0	
65/11/24	0400 - 0955	229.0 - 63.5		217.3 - 7.1		0430 - 0450		247.1 - 259.2		321.5 - 324.3	
						0505 - 0525		268.3 - 280.3		326.4 - 329.2	
65/11/25	0710 - 1005	134.5 - 240.3		167.7 - 212.6		0950 - 1005		271.3 - 240.3		210.4 - 212.6	
65/11/26	0710 - 0945	265.2 - 18.5		30.8 - 52.6		0745 - 0815		306.4 - 324.5		35.7 - 39.9	
65/11/27	0730 - 0940	88.0 - 166.6		238.0 - 256.4							
65/11/28	0645 - 0935	211.5 - 314.3		74.3 - 98.4		0725 - 0840		235.7 - 291.0		80.0 - 90.6	

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS		GODDARD SPACE FLIGHT CENTER		ACTIVITY CML III	IO PHASE
		CML III	IO PHASE	TIME(UT) HHMM - HHMM	IO PHASE		
65/12/20	0450 - 0755	217.2 - 325.0	218.7 - 244.9	0515 - 0620	232.3 - 271.6	222.3 - 231.5	
65/12/21	0650 - 0850	80.4 - 112.9	78.4 - 95.5	0810 - 0850	128.8 - 152.9	89.8 - 95.5	
65/12/22	0710 - 0900	243.2 - 273.4	285.7 - 292.7	0725 - 0830	252.2 - 273.4	287.8 - 292.7	
65/12/23	0710 - 0745	33.8 - 55.0	128.8 - 133.8				
65/12/24	0640 - 0740	166.4 - 202.6	329.4 - 336.8				
65/12/25	0635 - 0735	214.1 - 250.2	171.5 - 180.0				
65/12/26	0600 - 0730	83.5 - 137.9	9.6 - 22.3				
65/12/27	0650 - 0730	264.4 - 288.6	221.1 - 226.8				
65/12/28	0640 - 0720	49.0 - 72.2	62.4 - 68.0				
65/12/29	0635 - 0715	196.7 - 220.9	266.2 - 271.8				
65/12/30	0105 - 0700	147.8 - 2.4	62.3 - 112.7	0120 - 0150	156.9 - 175.0	64.4 - 68.6	
65/12/31	0610 - 0735	122.9 - 156.1	309.6 - 317.3				
66/01/01	0200 - 0730	122.4 - 303.7	117.5 - 160.3	0425 - 0445	210.0 - 222.1	138.2 - 141.0	
66/01/02	0310 - 0730	315.3 - 54.4	231.2 - 3.5				
66/01/03	0200 - 0655	63.7 - 242.0	165.1 - 207.1				
66/01/04	0110 - 0650	184.1 - 29.6	1.2 - 45.1	0235 - 0255	235.5 - 247.6	13.2 - 16.0	
66/01/05	0220 - 0645	170.0 - 177.3	215.5 - 252.9				
66/01/06	0040 - 0640	107.2 - 324.9	44.0 - 95.0	0420 - 0455 0535 - 0550	240.2 - 261.4 285.6 - 294.6	75.1 - 80.1 85.8 - 87.9	
66/01/07	0030 - 0210 0240 - 0400	251.8 - 312.3 330.4 - 18.8	247.1 - 261.2 265.4 - 276.7	0030 - 0100	251.8 - 269.9	247.1 - 251.4	

22.2		SCORDAR SPACE FLIGHT CENTER				OBSERVATIONS		IC PHASE		TIME(UT)		ACTIVITY		IO PHASE	
DATE	TIME(UT)	OBSERVATIONS		IC PHASE		TIME(UT)		ACTIVITY		IO PHASE					
YY/MM/DD	HHMM - HHMM	CML III	HHMM - HHMM	CML III	HHMM - HHMM	CML III	HHMM - HHMM	CML III	HHMM - HHMM	CML III	HHMM - HHMM				
66/01/09	0135 - 0230	232.4 - 277.7	303.2 - 313.7	0135 - 0250	232.4 - 277.7	303.2 - 313.7	0135 - 0250	232.4 - 277.7	303.2 - 313.7	303.2 - 313.7	0135 - 0250				
	0300 - 0625	283.7 - 47.7	315.1 - 343.9	0340 - 0410	307.9 - 326.1	323.7 - 324.9	0340 - 0410	307.9 - 326.1	323.7 - 324.9	323.7 - 324.9	0340 - 0410				
66/01/11	0030 - 0610	134.3 - 239.9	340.9 - 28.7	0320 - 0405	237.1 - 264.3	4.7 - 11.1	0320 - 0405	237.1 - 264.3	4.7 - 11.1	4.7 - 11.1	0320 - 0405				
66/01/12	0130 - 0615	321.2 - 123.5	193.5 - 233.9												
66/01/13	0210 - 0610	136.0 - 281.1	41.9 - 75.9	0530 - 0550	256.9 - 269.0	70.2 - 73.0	0530 - 0550	256.9 - 269.0	70.2 - 73.0	70.2 - 73.0	0530 - 0550				
66/01/16	2350 - 2430	293.7 - 293.9	116.7 - 118.2												
66/01/17	0110 - 0550	342.1 - 151.4	128.1 - 168.0												
66/01/18	0140 - 0545	150.8 - 299.0	235.8 - 10.2	0345 - 0420	225.4 - 247.6	353.4 - 359.3	0345 - 0420	225.4 - 247.6	353.4 - 359.3	353.4 - 359.3	0345 - 0420				
66/01/19	0010 - 0100	247.0 - 277.2	167.1 - 174.2	0010 - 0030	247.0 - 259.1	167.1 - 170.0	0010 - 0030	247.0 - 259.1	167.1 - 170.0	167.1 - 170.0	0010 - 0030				
	0140 - 0400	301.4 - 26.1	179.9 - 199.8												
66/01/20	2335 - 2430	167.0 - 182.1	205.5 - 213.0												
66/01/21	0220 - 0535	266.8 - 24.7	232.8 - 260.3	0225 - 0250	260.3 - 284.9	233.5 - 237.1	0225 - 0250	260.3 - 284.9	233.5 - 237.1	233.5 - 237.1	0225 - 0250				
				0340 - 0350	315.1 - 321.2	244.1 - 245.5	0340 - 0350	315.1 - 321.2	244.1 - 245.5	244.1 - 245.5	0340 - 0350				
66/01/22	0310 - 0530	87.6 - 172.2	22.6 - 102.5	0340 - 0450	105.7 - 148.0	86.0 - 96.8	0340 - 0450	105.7 - 148.0	86.0 - 96.8	86.0 - 96.8	0340 - 0450				
66/01/23	0000 - 0520	121.3 - 316.7	260.1 - 305.0												
66/01/27	0000 - 0515	5.5 - 156.0	253.5 - 37.9												
66/01/28	0100 - 0510	192.3 - 343.5	206.4 - 241.7	0225 - 0250	243.7 - 258.8	218.4 - 221.9	0225 - 0250	243.7 - 258.8	218.4 - 221.9	218.4 - 221.9	0225 - 0250				
66/01/29	0300 - 0510	55.4 - 124.0	66.0 - 84.4												
66/02/01	0100 - 0455	74.5 - 216.6	306.1 - 333.0												
66/02/10	2205 - 2235	33.6 - 51.9	150.6 - 154.9												
66/02/11	0325 - 0410	227.3 - 254.5	156.0 - 202.4												
	2205 - 2245	194.3 - 208.5	253.4 - 359.1												

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	22.2 GCDARE SPACE FLIGHT CENTER		ACTIVITY CML III	TO PHASE
			IC PHASE	TIME(UT) HHMM - HHMM		
66/02/12	0311 - 0405	20.6 - 41.3	35.1 - 44.3			
66/02/13	0225 - 0415	168.2 - 192.4	242.9 - 248.6			
66/02/16	2145 - 2255	204.6 - 245.9	248.4 - 258.3			
66/02/17	2145 - 2225	355.0 - 19.2	172.0 - 177.7			
66/02/25	0000 - 0105	49.5 - 59.1	135.3 - 144.6			
66/03/05	2100 - 2140	214.7 - 238.9	140.8 - 146.5			
66/03/21	0305 - 0340	171.1 - 192.2	2.4 - 7.3			
66/03/25	0215 - 0330	22.3 - 67.6	85.2 - 99.9			
66/04/08	0205 - 0555	330.9 - 59.9	54.4 - 87.1			
66/04/09	0135 - 0555	93.1 - 257.2	253.6 - 257.1			
66/04/10	0140 - 0530	246.4 - 25.5	57.9 - 130.6			
66/04/11	0210 - 0550	54.9 - 187.5	304.8 - 335.8			
66/04/12	0200 - 0550	199.2 - 338.2	147.6 - 180.1			
66/04/14	0305 - 0540	179.1 - 272.8	203.3 - 225.0			
66/04/15	0230 - 0530	309.2 - 57.0	41.1 - 66.7			
66/04/16	0230 - 0535	58.6 - 210.4	244.6 - 270.5			
66/04/17	0130 - 0530	154.5 - 257.6	75.3 - 113.7			
66/04/19	0125 - 0320 (J30 - 1520)	151.2 - 219.7 225.7 - 252.2	125.8 - 142.1 143.5 - 159.8			
66/04/20	0415 - 0520	43.2 - 82.5	352.2 - 1.4			
66/04/21	0130 - 0515	53.8 - 229.9	173.1 - 204.7	0130 - 0245	93.8 - 139.2	173.1 - 183.7

DATE YY/MM/DD	TIME (UT) HHMM - HHMM	OBSERVATIONS		G OF ARE SPACE FLIGHT CENTER		ACTIVITY CWL III	IC PHASE
		CWL III	IC PHASE	TIME (UT) HHMM - HHMM			
66/10/22	0237 - 0510	240.4 - 17.1	24.2 - 46.9				
66/10/27	092 - 0945	226.7 - 241.5	35.0 - 34.5				
66/10/28	0915 - 1130	14.2 - 55.9	237.2 - 256.4				
66/10/29	0910 - 1145	151.6 - 255.2	27.0 - 101.7	0917 - 0920	161.6 - 167.7	91.7 - 91.4	
66/10/10	0910 - 1200	212.1 - 54.9	282.6 - 317.8				
66/10/11	0915 - 1220	99.6 - 144.9	125.7 - 136.3				
66/10/12	0910 - 1100	247.1 - 315.6	329.2 - 346.2				
66/10/13	0910 - 1140	27.6 - 134.1	171.7 - 194.3				
66/10/14	0855 - 1110	165.1 - 266.7	15.3 - 34.2				
66/10/15	0855 - 1030	335.0 - 23.2	217.9 - 231.5				
66/10/16	0850 - 1120	121.1 - 212.7	61.0 - 62.1	0935 - 1000	151.3 - 165.4	67.3 - 70.8	
66/10/17	0845 - 0945	270.5 - 306.8	263.7 - 272.2				
66/10/18	0840 - 0945	58.0 - 57.3	126.1 - 115.2				
66/10/19	0840 - 1120	208.6 - 315.1	210.1 - 332.8				
66/10/20	0835 - 1100	356.1 - 51.7	151.9 - 172.4				
66/10/21	0830 - 1135	143.6 - 255.4	355.6 - 21.6				
66/10/22	1940 - 2215	293.1 - 72.2	293.5 - 315.5				
	2240 - 2255	57.9 - 97.1	312.1 - 321.2				
66/10/23	1540 - 2255	125.7 - 247.5	136.2 - 162.7	2220 - 2235	226.4 - 235.4	159.7 - 160.8	
	2330 - 2340	263.7 - 274.7	165.5 - 176.7	2330 - 2340	268.7 - 274.7	165.6 - 170.0	
66/10/24	0025 - 0055	21.6 - 22.1	176.4 - 180.7	0025 - 0055	311.9 - 320.1	176.4 - 180.7	

22.2		STANDARD SPACE FLIGHT CENTER		ACTIVITY		IO PHASE	
DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS		CML III	TIME(UT) HHMM - HHMM	CML III	IO PHASE
		CML III	IO PHASE				
66/10/24	1535 - 2255	277.2 - 34.1	339.8 - 9.1				
66/10/25	1815 - 1045	16.6 - 107.3	86.5 - 1.7.6				
66/10/27	0810 - 0935	314.7 - 6.1	132.4 - 144.4				
66/10/28	0810 - 1005	155.2 - 174.7	335.7 - 353.0				
66/10/29	0805 - 1035	252.7 - 243.4	178.5 - 109.8				
66/10/30	0800 - 1135	40.3 - 170.3	22.0 - 52.2				
66/10/31	0755 - 1045	187.8 - 290.5	224.3 - 248.5	0900 - 1005	227.1 - 266.4	233.6 - 242.8	
66/11/01	0750 - 1050	335.3 - 64.2	67.1 - 52.4				
66/11/02	0750 - 1045	125.9 - 231.7	272.9 - 265.7				
66/11/03	0745 - 1130	273.4 - 61.5	113.6 - 147.5				
66/11/04	0745 - 1045	64.0 - 172.8	317.3 - 342.7				
66/11/05	0740 - 1035	211.6 - 317.3	155.1 - 183.9				
66/11/06	0735 - 1215	350.1 - 169.4	2.7 - 42.1				
66/11/07	0730 - 1145	145.7 - 300.8	214.8 - 241.1	0940 - 1105	225.2 - 276.6	223.3 - 235.4	
66/11/08	0725 - 1040	294.2 - 52.1	47.9 - 75.2				
66/11/09	0720 - 1145	21.8 - 217.8	250.7 - 282.7				
66/11/10	0720 - 1105	232.3 - 5.4	93.7 - 125.4				
66/11/11	0715 - 1045	19.9 - 146.9	257.2 - 327.0				
66/11/12	0710 - 1135	167.5 - 327.7	135.1 - 176.6				
66/11/13	0705 - 1200	315.0 - 153.4	342.8 - 24.3				

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III		GODDARD SPACE FLIGHT CENTER		ACTIVITY CML III		IO PHASE
		HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	
66/11/14	0755 - 1040	105.6 - 235.6	195.5 - 216.1	1905 - 1040	210.5 - 235.6	211.1 - 216.1		
66/11/15	0700 - 1040	253.2 - 26.2	29.8 - 59.6	1700 - 1040	253.2 - 26.2	29.8 - 59.6		
66/11/16	0655 - 1045	40.8 - 179.9	211.4 - 264.2					
66/11/17	0650 - 1045	188.4 - 330.4	74.0 - 167.0					
66/11/18	0650 - 1045	239.0 - 121.1	278.0 - 311.4					
66/11/19	0645 - 1135	126.6 - 301.9	120.0 - 161.0	0645 - 1135	126.6 - 301.9	120.0 - 161.0		
66/11/20	0725 - 1230	201.4 - 119.7	230.1 - 11.6					
66/11/21	0635 - 1045	61.7 - 212.9	145.6 - 201.2					
66/11/22	0645 - 1005 0920 - 1020	218.4 - 237.5 312.1 - 348.4	11.2 - 14.1 33.0 - 41.4					
66/11/23	0640 - 1045	5.0 - 154.1	213.7 - 248.6					
66/11/24	0640 - 1050	156.6 - 207.8	57.2 - 52.3	0935 - 0950	262.4 - 271.5	81.7 - 83.8		
66/11/25	0630 - 1040	311.2 - 52.4	255.7 - 295.2					
66/11/26	0615 - 0640 0715 - 1145	82.8 - 57.9 119.0 - 262.3	101.4 - 133.9 178.8 - 147.6					
66/11/27	0650 - 1210	254.6 - 28.0	306.8 - 354.9					
66/11/28	0605 - 1230	12.0 - 25.8	146.0 - 200.7	1120 - 1200	218.4 - 232.6	190.7 - 196.4		
66/11/29	0605 - 1045	169.6 - 317.9	351.3 - 29.6					
66/11/30	0600 - 1045	316.2 - 123.6	192.6 - 233.2					
66/12/01	0625 - 1045	122.0 - 275.2	35.9 - 76.3					
66/12/02	0600 - 1045	257.5 - 65.8	240.1 - 280.6					

22.2		GODDARD SPACE FLIGHT CENTER		ACTIVITY		IO PHASE	
OBSERVATIONS		TIME(UT)		CML III		IO PHASE	
DATE	TIME(UT)	CML III	HHMM - HHMM	CML III	HHMM - HHMM	IO PHASE	HHMM - HHMM
66/12/13	0745 - 1145	84.4 - 259.8	1730 - 0815	172.6 - 129.8	0925 - 1030	95.7 - 102.1	172.1 - 193.3
			1025 - 1735	268.4 - 243.4	1025 - 1735	123.4 - 121.8	
66/12/14	0645 - 1145	221.1 - 47.4	0715 - 0720	244.2 - 247.2	0740 - 0750	299.0 - 298.7	0900 - 0910
				307.7 - 313.7		301.6 - 303.0	
66/12/15	0625 - 1040	4.6 - 159.9					
66/12/16	0630 - 1050	159.3 - 315.5					
66/12/17	0545 - 1045	281.7 - 173.1					
66/12/18	0620 - 1045	53.5 - 253.2					
66/12/19	0625 - 1040	247.2 - 41.4					
66/12/10	0620 - 1115	34.9 - 213.2					
66/12/11	0630 - 1115	151.6 - 3.9					
66/12/12	0625 - 1045	339.2 - 135.4					
66/12/13	0630 - 1045	132.9 - 267.1					
66/12/14	0550 - 1100	255.4 - 16.8					
66/12/15	0500 - 1030	19.8 - 225.4					
66/12/16	0810 - 1040	285.4 - 16.1					
66/12/17	0620 - 1050	5.6 - 172.2					
66/12/18	0645 - 1045	175.3 - 320.5					
66/12/19	0500 - 1040	262.5 - 112.1					
66/12/20	0700 - 1035	125.8 - 255.8					

DATE YY/MM/DD	TIME(UT) HHMM - PMMM	22.2 GODDARD SPACE FLIGHT CENTER		ACTIVITY CML III	IO PHASE
		OBSERVATIONS CML III	TIME(UT) HHMM - HHMM		
66/12/22	0630 - 1025	49.0 - 151.1	355.9 - 28.7		
66/12/23	0625 - 1015	156.7 - 335.7	198.4 - 231.2		
66/12/24	0545 - 0750	323.2 - 38.9	36.3 - 53.8		
66/12/28	0600 - 1000	219.2 - 7.1	138.1 - 166.6		
66/12/29	0400 - 1000	353.1 - 150.8	320.0 - 10.5		
67/01/01	0630 - 0545	115.9 - 213.2	231.9 - 259.6		
67/01/02	0605 - 0940	251.5 - 21.5	71.3 - 101.6		
67/01/03	0410 - 0535	332.6 - 169.2	259.5 - 305.5		
67/01/04	0330 - 0530	99.1 - 116.2	56.5 - 147.6		
67/01/05	0325 - 0925	246.8 - 104.5	300.4 - 351.0		
67/01/06	0625 - 0920	146.4 - 212.2	168.8 - 193.7		
67/01/07	0320 - 0505	155.2 - 246.7	346.7 - 1.4		
	0750 - 0920	348.4 - 42.9	24.6 - 37.2		
67/01/08	0605 - 0515	75.6 - 150.5	213.6 - 240.6		
67/01/09	0310 - 0910	120.5 - 339.2	32.1 - 82.7		
67/01/10	0305 - 0505	263.2 - 125.9	235.5 - 286.6		
67/01/11	0300 - 0900	55.9 - 273.5	77.7 - 128.6		
			0330 - 0345	74.0 - 83.1	81.9 - 84.0
			0435 - 0510	113.3 - 134.5	91.1 - 96.0
67/01/12	0630 - 0955	133.5 - 61.2	311.9 - 332.3		
67/01/13	0625 - 0850	121.2 - 208.9	154.1 - 174.7		
67/01/19	0600 - 0825	290.2 - 17.9	293.1 - 313.5		

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS		GODDARD SPACE FLIGHT CENTER		ACTIVITY CML III	IO PHASE
		CML III	IO PHASE	TIME(UT) HHMM - HHMM	IO PHASE		
67/11/20	0600 - 0620	91.9 - 165.5	135.9 - 155.8				
67/11/21	0600 - 0615	231.6 - 213.2	346.1 - 356.0				
67/11/22	0630 - 0610	48.4 - 160.8	157.7 - 212.0				
67/11/23	0415 - 0635	105.4 - 243.5	12.2 - 44.5				
67/11/24	0400 - 0635	251.0 - 36.2	214.0 - 248.8	0535 - 0645	308.5 - 350.8	227.5 - 237.5	
67/11/25	0155 - 0645	326.1 - 141.5	35.4 - 87.2				
67/11/26	0155 - 0755	115.8 - 226.5	263.8 - 294.7				
67/11/27	0145 - 0745	261.4 - 116.1	55.1 - 136.1				
67/11/28	0200 - 0720	61.2 - 73.3	291.7 - 264.6				
	0315 - 0745	165.5 - 269.4	202.3 - 34.3				
67/11/29	0140 - 0740	196.7 - 57.4	131.7 - 183.0				
67/11/30	0135 - 0735	347.4 - 205.0	235.2 - 25.7				
67/11/31	0130 - 0730	135.0 - 352.7	177.9 - 229.2	0450 - 0425	225.7 - 240.8	190.3 - 202.8	
67/12/01	0125 - 0725	282.6 - 140.3	20.6 - 71.3				
67/12/02	0120 - 0720	7.03 - 287.9	224.1 - 275.1				
67/12/03	0125 - 0715	224.0 - 75.6	57.6 - 117.1				
67/12/04	0620 - 0705	193.0 - 227.2	313.7 - 327.0				
67/12/05	0630 - 0710	345.7 - 17.9	155.2 - 163.9				
67/12/06	0615 - 0735	131.2 - 161.5	355.8 - 6.6				
67/12/07	0200 - 0830	127.7 - 264.7	167.4 - 157.3	0220 - 0300	139.8 - 164.0	170.2 - 175.9	
				0340 - 0350	188.1 - 194.2	181.6 - 183.0	
				0440 - 0525	224.4 - 251.6	190.2 - 196.6	

22.2 GODDARD SPACE FLIGHT CENTER									
OBSERVATIONS		IC PHASE		TIME(UT)		ACTIVITY		IO PHASE	
DATE	TIME(UT)	CWL III		HHMM - HHMM		HHMM - HHMM	CWL III		
67/02/12	0735 - 0825	170.4 - 242.5	32.9 - 125.6	0750 - 0820	118.5 - 136.6	0820 - 0825	233.4 - 248.6	95.1 - 90.3	
						0820 - 0825		122.0 - 125.6	
	0830 - 1610	269.7 - 305.9	130.5 - 136.1	0850 - 0855	269.7 - 302.9			130.5 - 138.4	
67/02/16	0230 - 1730	43.3 - 224.7	230.0 - 242.6	0250 - 0710	43.3 - 224.7			200.0 - 242.6	
67/03/01	0220 - 0230	212.0 - 219.0	329.0 - 330.4						
	0415 - 0440	282.4 - 297.5	345.1 - 348.6						
67/03/07	0230 - 0400	42.2 - 56.6	111.2 - 124.0						
67/03/09	0305 - 0400	4.4 - 37.7	163.6 - 171.4						
67/03/10	0220 - 0350	127.7 - 182.1	0.5 - 13.1						
67/03/13	0100 - 0410	170.9 - 265.8	240.4 - 267.2	0255 - 0315	240.4 - 252.5			256.6 - 259.4	
67/03/14	0230 - 0430	15.8 - 66.4	55.7 - 112.7						
67/03/15	0200 - 0400	148.2 - 220.7	295.6 - 312.5						
67/03/16	0220 - 0420	310.8 - 23.2	141.6 - 158.7						
67/09/12	1025 - 1055	293.5 - 323.8	65.4 - 52.4	1110 - 1120	296.6 - 302.6			86.1 - 87.5	
67/09/13	1000 - 1055	90.9 - 114.1	287.0 - 294.8						
67/09/14	0955 - 1120	228.2 - 279.6	130.3 - 142.2						
67/09/15	1000 - 1050	21.6 - 51.9	333.9 - 341.1						
67/09/19	0950 - 1025	257.1 - 278.3	66.3 - 71.2						
67/09/28	0835 - 1100	125.2 - 212.9	65.4 - 105.7	0950 - 1030	134.3 - 194.8			87.5 - 101.5	
67/10/06	0810 - 1015	233.4 - 305.0	267.5 - 285.2						
67/10/14	0740 - 1050	338.7 - 53.5	90.6 - 117.2						
67/10/15	0730 - 1020	123.1 - 255.8	291.9 - 316.1						

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS		SURFACE SPACE FLIGHT CENTER		ACTIVITY CML III	IO PHASE
		CML III	IC PHASE	TIME(UT) HHMM - HHMM			
67/11/16	0730 - 1035	373.5 - 25.3	135.5 - 161.4				
67/11/17	0730 - 1035	63.6 - 172.8	239.0 - 0.0				
67/11/18	0725 - 1030	211.3 - 329.2	181.1 - 208.5				
67/11/19	0720 - 1025	359.8 - 125.7	24.5 - 54.9				
67/11/20	0720 - 1120	145.2 - 294.3	225.9 - 240.9	0905 - 1000 1015 - 1025	212.7 - 245.9 255.7 - 261.0	241.8 - 249.6 251.7 - 253.1	
67/11/21	0715 - 1100	254.5 - 72.6	70.5 - 102.1				
67/11/27	0710 - 1025	116.3 - 234.2	218.9 - 236.5	1035 - 1035	204.0 - 234.2	229.4 - 236.5	
67/11/28	0710 - 1100	246.8 - 45.3	51.2 - 85.6				
67/11/29	0705 - 1100	54.3 - 156.3	255.1 - 268.5				
67/11/30	0705 - 1105	214.7 - 345.2	35.0 - 132.6	0755 - 0910 0825 - 0900	234.9 - 244.0 253.1 - 274.2	106.0 - 108.1 110.2 - 115.1	
67/11/31	0700 - 1025	352.2 - 116.1	301.4 - 330.6				
67/11/01	0655 - 1045	139.6 - 278.7	143.9 - 176.2				
67/11/04	0645 - 1100	373.8 - 19.2	58.6 - 69.2				
67/11/05	0640 - 1055 1105 - 1145	121.3 - 156.6 172.7 - 156.8	260.0 - 271.2 272.7 - 278.4				
67/11/06	0640 - 1040	271.8 - 309.3	104.4 - 112.8				
67/11/07	0720 - 1145	237.6 - 127.8	287.8 - 325.5				
67/11/08	0715 - 1150	125.1 - 251.3	130.4 - 169.0	0715 - 1150	125.1 - 291.3	130.4 - 169.0	
67/11/09	0715 - 1110	275.6 - 57.7	234.2 - 7.5				
67/11/10	0620 - 1050	32.8 - 156.1	163.1 - 247.2	0935 - 1015	150.7 - 168.9	196.6 - 200.3	

DATE		TIME(UT)		ORSE-VATIONS		22.2		SCICARD SPACFL FLIGHT CENTER		ACTIVITY		IC PHASE	
YY/MM/DD		HHMM	- HHMM	CML III		IC PHASE		TIME(UT)		CML III		IC PHASE	
67/11/11		0610	- 1150	177.3	- 22.9	12.1	- 59.9	0925	- 1045	111.2	- 143.5	40.9	- 50.9
67/11/12		0610	- 1215	327.8	- 182.4	214.4	- 264.8						
67/11/12		0610	- 1055	119.3	- 250.5	59.7	- 59.6	0720	- 0910	160.6	- 190.8	58.5	- 75.5
67/11/14		0600	- 1055	263.6	- 81.1	263.6	- 302.0						
67/11/15		0555	- 1045	50.3	- 225.5	103.6	- 143.6						
67/11/16		0555	- 1105	200.8	- 28.2	306.5	- -9.5						
67/11/17		0550	- 1045	348.3	- 166.6	143.7	- 190.2						
67/11/18		0550	- 1150	138.8	- 256.4	-7.1	- 43.7						
67/11/19		0545	- 1150	266.3	- 148.9	194.7	- 246.4						
67/11/20		0540	- 1105	73.6	- 270.3	35.3	- 63.9	0555	- 0630	82.9	- 116.1	40.4	- 48.1
67/11/21		0535	- 1030	221.2	- 51.7	240.2	- 285.0	0535	- 0705	221.3	- 275.7	240.2	- 253.0
67/11/22		0530	- 1045	9.8	- 199.2	93.4	- 127.6						
67/11/23		0525	- 1110	156.3	- 4.9	236.0	- 335.1						
67/11/24		0520	- 1040	300.8	- 137.3	128.5	- 173.4						
67/11/25		0520	- 1145	54.4	- 327.1	332.5	- 27.0						
67/11/26		0520	- 1205	244.9	- 125.7	175.1	- 232.4						
67/11/27		0520	- 1030	35.4	- 234.9	19.4	- 45.9						
67/11/28		0510	- 1045	175.9	- 22.5	224.6	- 248.2	0510	- 0740	216.2	- 270.6	220.1	- 241.9
								0840	- 0910	306.9	- 325.0	250.4	- 254.7
67/11/29		0510	- 1045	330.5	- 173.0	49.7	- 111.6	0845	- 1015	106.5	- 154.0	56.2	- 107.4
67/11/30		0505	- 1045	118.0	- 333.6	267.0	- 315.5	0845	- 0900	251.0	- 260.1	298.4	- 300.5
								0915	- 0940	269.2	- 278.2	302.7	- 304.8

22.2 GORDON SPACE FLIGHT CENTER						
DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	IO PHASE	TIME(UT) HHMM - HHMM	ACTIVITY CML III	IO PHASE
67/12/01	0505 - 1045	288.6 - 110.1	110.5 - 158.2			
67/12/02	0505 - 1320	59.1 - 255.4	314.3 - 24.4			
67/12/03	0507 - 1120	276.7 - 76.4	156.3 - 210.1			
67/12/04	0455 - 1145	354.2 - 242.1	-0.0 - 57.7			
67/12/05	0450 - 1045	141.8 - 356.4	201.8 - 252.2	0725 - 0910 0915 - 0925	235.5 - 262.7 302.0 - 318.0	223.8 - 237.2 239.4 - 245.8
67/12/06	0445 - 1050	239.3 - 150.0	45.4 - 96.5	1010 - 1050	125.8 - 150.0	95.9 - 96.5
67/12/07	0440 - 1045	76.9 - 257.5	247.5 - 299.5			
67/12/08	0430 - 1040	227.4 - 65.1	51.2 - 141.7			
67/12/09	0430 - 1130	180.0 - 271.9	254.9 - -5.5			
67/12/10	0435 - 1155	165.6 - 71.6	137.1 - 159.2			
67/12/12	0715 - 1030	203.5 - 327.4	276.6 - 235.7			
67/12/13	0710 - 1045	351.1 - 121.0	50.1 - 80.2			
67/12/14	0500 - 1200	63.1 - 317.0	234.6 - 294.4			
67/12/15	0500 - 1205	213.6 - 11.6	78.4 - 138.0			
67/12/16	0455 - 1145	1.2 - 240.1	281.3 - 336.5			
67/12/17	0455 - 1220	151.8 - 60.9	124.3 - 127.0			
67/12/18	0450 - 1205	259.4 - 272.4	327.8 - 29.3			
67/12/20	0350 - 1045	203.4 - 53.9	6.4 - 64.7			
67/12/21	0350 - 1140	355.0 - 276.1	275.0 - 276.0			
67/12/22	0345 - 1040	143.6 - 33.5	52.5 - 116.6	0620 - 0645 0705 - 0715	236.3 - 251.4 263.5 - 269.5	74.2 - 77.7 80.5 - 81.9

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	22.2 GUARD SPACE FLIGHT CENTER		TIME(UT) HHMM - HHMM	ACTIVITY CML III	IO PHASE
		OBSERVATIONS CML III	IO PHASE			
67/12/27	0330 - 1045	166.6 - 69.6	-11.9 - 49.4	0535 - 0545	242.2 - 248.2	5.8 - 7.2
67/12/28	0330 - 1200	317.2 - 245.6	100.8 - 263.3	0920 - 0935 1030 - 1120	168.9 - 177.9 211.2 - 241.4	240.5 - 242.7 250.5 - 257.6
67/12/29	0325 - 0625 0650 - 1040	104.9 - 266.2 301.4 - 7.9	34.3 - 76.4 79.9 - 95.3			
67/12/30	0320 - 1200	252.5 - 206.9	236.7 - 310.7			
67/12/31	0320 - 1110	43.1 - 227.3	50.3 - 146.3	0915 - 0919	76.4 - 145.9	89.7 - 104.2
68/01/01	0315 - 0655 0705 - 1320	190.7 - 323.7 329.8 - 156.5	283.4 - 314.7 316.1 - 9.1			
68/01/05	0630 - 1045	191.2 - 345.4	45.2 - 80.9	0935 - 0935	260.8 - 266.8	61.3 - 62.7
68/01/06	0610 - 1140	325.8 - 159.3	245.6 - 292.6	0610 - 0615	329.8 - 344.9	245.6 - 249.2
68/01/07	0620 - 1135	126.5 - 316.9	90.5 - 134.7	0620 - 0720 0740 - 0900	124.5 - 162.9 174.9 - 223.2	90.5 - 98.9 101.7 - 112.9
68/01/08	0530 - 1045	246.9 - 77.4	287.4 - 332.1	0955 - 0910	10.9 - 19.9	316.5 - 318.7
68/01/09	0630 - 1125	73.9 - 242.2	138.7 - 180.4			
68/01/10	0630 - 1040	224.5 - 15.7	-16.8 - 18.4	0715 - 0730	251.7 - 260.9	-10.4 - -8.3
68/01/11	0410 - 1045	290.5 - 149.4	166.0 - 222.1			
68/01/13	0615 - 1110	307.5 - 125.8	211.2 - 273.2	0645 - 0655 0755 - 0815	325.6 - 331.6 7.9 - 14.0	235.5 - 236.9 245.4 - 246.9
68/01/14	0630 - 1100	107.2 - 270.4	76.9 - 114.8	0650 - 0705 0715 - 0955	119.3 - 128.4 134.4 - 194.9	79.7 - 81.8 83.2 - 97.3
68/01/15	0500 - 1040	203.4 - 49.0	268.0 - 316.4			
68/01/16	0600 - 1045	30.4 - 242.7	119.5 - 159.7			
68/01/17	0630 - 1045	199.2 - 343.4	323.2 - 4.2			

DATE YYMM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS		GODDARD SPACE FLIGHT CENTER		ACTIVITY CWL III	IG PHASE
		CWL III	IC PHASE	TIME(UT) HHMM - HHMM			
68/11/18	0625 - 1045	346.9 - 144.1	177.2 - 217.1				
68/11/19	1630 - 1045	140.6 - 254.2	15.3 - 51.1				
68/11/20	0140 - 1655	115.9 - 376.4	177.1 - 221.9	0415 - 1520	219.6 - 243.9	199.1 - 208.4	
	0715 - 1220	312.4 - 142.9	223.3 - 268.2				
68/11/21	0115 - 0655	263.6 - 57.1	21.7 - 65.6				
	0715 - 1205	103.1 - 264.5	67.2 - 109.1	0935 - 1025	157.5 - 137.7	79.6 - 86.6	
68/11/22	0135 - 0655	54.3 - 247.7	223.9 - 269.5				
	0715 - 1220	253.4 - 84.2	270.9 - 315.6				
68/11/23	0130 - 0655	201.9 - 38.4	56.3 - 112.4				
	0715 - 1205	44.5 - 225.5	113.8 - 156.2				
68/11/24	0130 - 1125	352.6 - 352.4	270.7 - 5.0				
68/11/25	0625 - 1020	321.7 - 103.7	155.3 - 188.6				
68/11/27	0610 - 1110	247.9 - 39.1	199.2 - 234.8	0500 - 0620	247.9 - 263.0	199.2 - 202.0	
68/11/28	0405 - 1005	325.1 - 186.7	27.0 - 77.5	1015 - 0945	150.5 - 174.7	69.1 - 74.7	
68/11/29	0555 - 1000	156.2 - 334.4	246.0 - 280.9	0625 - 0710	204.4 - 231.6	250.3 - 256.7	
68/11/30	0140 - 0600	153.6 - 340.0	47.9 - 90.0				
	0610 - 1205	346.7 - 200.7	51.4 - 101.4				
68/11/31	0045 - 0650	306.3 - 150.9	250.9 - 301.4				
	0700 - 1150	167.0 - 342.3	302.8 - 16.2				
68/12/01	0045 - 1600	50.9 - 281.4	92.7 - 137.0	0100 - 0155	100.0 - 133.2	94.8 - 102.5	
				0335 - 0400	153.7 - 208.8	116.6 - 120.1	
68/12/02	0610 - 1200	287.4 - 139.1	138.4 - 188.1				
	0105 - 0600	247.6 - 72.1	296.4 - 341.6				

22.2 GODDARD SPACE FLIGHT CENTER										
DATE YYMM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III		IO PHASE		TIME(UT) HHMM - HHMM		ACTIVITY CML III		IO PHASE
68/02/02	0610 - 1120	79.1	- 245.5	-17.0	- 26.0					
68/02/03	0245 - 0255	87.7	- 11.0	131.0	- 154.1					
	0315 - 1110	133.0	- 5.2	141.0	- 228.5	0515 - 0705	231.5	- 262.1	186.5	- 163.6
68/02/04	0155 - 0155	140.0	- 225.3	-14.3	- 5.0					
	0245 - 1150	258.5	- 259.1	1.2	- 77.6					
68/02/05	0158 - 0735	236.7	- 231.6	137.8	- 245.5					
	0810 - 1210	242.7	- 21.8	254.5	- 253.3	0925 - 1005	251.8	- 276.0	252.6	- 258.3
68/02/06	0145 - 0600	124.4	- 314.5	31.2	- 75.4					
	0610 - 1210	321.9	- 172.5	76.2	- 126.0					
68/02/07	0135 - 1000	240.1	- 175.5	233.3	- 279.6					
	0610 - 1215	111.6	- 344.4	231.0	- 335.5	0120 - 0310	256.2	- 2.7	239.7	- 255.4
68/02/08	0025 - 1100	53.7	- 74.8	75.3	- 8.2					
	0120 - 1100	85.9	- 77.5	83.0	- 144.8	0155 - 0300	108.1	- 147.4	87.6	- 57.0
68/02/09	0020 - 0600	201.3	- 46.9	279.7	- 326.9					
	0610 - 1110	53.0	- 234.3	234.3	- 18.6					
68/02/10	0625 - 0610	212.7	- 312.5	173.2	- 196.7	0530 - 0700	215.7	- 233.9	173.9	- 178.2
68/02/11	0630 - 0905	5.4	- 100.2	18.2	- 36.9					
68/02/12	0555 - 0615	136.0	- 256.3	216.5	- 245.0	0745 - 0915	202.5	- 256.9	232.2	- 245.0
68/02/13	0700 - 0400	130.8	- 217.1	35.6	- 44.0					
	0610 - 0635	209.7	- 73.5	50.8	- 85.4					
68/02/14	0630 - 0630	52.5	- 183.1	269.1	- 249.0					
68/02/15	0615 - 0645	240.1	- 33.8	109.9	- 131.1					
68/02/16	0615 - 0630	191.3	- 21.7	267.6	- 312.3	0355 - 0410	306.2	- 315.2	294.6	- 296.7

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS		GODDARD SPACE FLIGHT CENTER		ACTIVITY CML III	IO PHASE
		CML III	IO PHASE	TIME(UT) HHMM - HHMM	IO PHASE		
68/02/16	0810 - 1145	27.8 - 23.1	213.7 - 1.6				
68/02/17	0810 - 0840	251.7 - 265.2	173.5 - 177.7				
68/02/18	0830 - 0830	341.2 - 53.9	3.6 - 27.5				
68/02/19	0830 - 1145	55.6 - 316.3	158.3 - 256.3	0845 - 1010	213.5 - 264.5	226.1 - 234.2	
68/02/20	0830 - 1215	282.6 - 352.1	50.5 - 66.6				
68/02/21	0830 - 0820	73.3 - 175.1	254.5 - 278.6				
68/02/22	0825 - 0815	22.9 - 323.7	95.7 - 127.7				
68/02/23	0830 - 0810	14.6 - 111.4	301.9 - 324.5				
	2330 - 0830	271.4 - 372.1	65.3 - 284.9				
68/02/24	0840 - 1130	147.2 - 328.6	141.4 - 183.7				
	2325 - 2400	59.0 - 81.2	235.0 - 254.0				
68/02/25	0825 - 1130	95.3 - 134.6	257.5 - 346.7				
	0150 - 1130	146.7 - 119.2	303.6 - 27.0				
68/02/26	0825 - 1115	318.5 - 272.9	157.2 - 231.3	0940 - 1115	221.5 - 272.9	219.2 - 231.3	
68/02/27	0825 - 1110	179.2 - 67.6	1.6 - 73.8				
68/02/28	0130 - 0420	226.6 - 329.4	197.0 - 221.2	0130 - 0245	226.6 - 271.5	197.0 - 207.7	
	0800 - 1105	29.9 - 214.3	235.5 - 278.9				
68/02/29	0130 - 0420	11.2 - 127.1	35.3 - 64.6				
	0600 - 1055	180.5 - 356.5	78.6 - 127.2				
68/03/01	0100 - 0150	113.5 - 143.7	231.8 - 238.9				
	0115 - 0115	152.8 - 158.5	241.7 - 242.5				
	0220 - 0235	158.2 - 217.2	251.7 - 253.8				
	0300 - 0405	222.3 - 255.8	257.4 - 272.3				

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS		23.2 COTFARD SPACE FLIGHT CENTER		ACTIVITY	
		CML III		TIME(UT) HHMM - HHMM		CML III	
				IU PHASE		IO PHASE	
68/03/01	0600 - 1055	321.2 - 145.5	263.0 - 324.7				
68/03/02	0305 - 1050	15.0 - 257.2	131.0 - 166.8	0845 - 0930		221.5 - 248.8	149.1 - 155.4
68/03/05	0000 - 0430 0555 - 1030	356.1 - 159.4 210.8 - 17.0	326.5 - 4.5 16.4 - 55.0				
68/03/06	0130 - 0500 0510 - 1035	164.6 - 325.2 334.2 - 170.7	173.6 - 212.1 213.5 - 255.8	0220 - 0240		219.3 - 243.5	186.5 - 192.2
68/03/07	0000 - 0105 0125 - 0425 0600 - 1010	297.4 - 336.7 248.8 - 55.6 155.1 - 306.2	13.5 - 22.6 23.4 - 47.8 64.0 - 99.1				
68/03/08	0115 - 0205 0505 - 0910	133.4 - 163.6 272.5 - 60.6	227.7 - 234.8 260.4 - 295.2				
68/03/09	0150 - 1000	305.2 - 241.5	75.7 - 144.9				
68/03/10	0620 - 1000	41.4 - 32.1	257.4 - 1.7				
68/03/11	0225 - 0315 0405 - 0445 0600 - 0955	267.6 - 257.9 328.1 - 352.3 37.6 - 170.7	127.9 - 134.8 141.9 - 147.6 158.3 - 191.7				
68/03/12	0120 - 0325 0550 - 0910	342.7 - 54.6 182.2 - 303.1	314.6 - 340.7 1.0 - 29.1	0755 - 0823		257.3 - 275.9	18.6 - 22.8
68/03/13	0720 - 0945	27.3 - 114.9	217.2 - 237.9				
68/03/14	0120 - 0355 0520 - 0945	325.2 - 53.9 105.3 - 265.5	15.0 - 31.7 43.6 - 87.8	0905 - 0920		241.4 - 250.4	75.2 - 77.3
68/03/15	0155 - 0540	132.0 - 53.1	216.5 - 284.6	0355 - 0545		264.6 - 271.1	235.6 - 251.2
68/03/16	0120 - 0335	261.5 - 324.9	56.8 - 71.5				

DATE		TIME(UT)	22.2	SOUTHERN SPACE FLIGHT CENTER		ACTIVITY	IO PHASE
YY/MM/DD	HHMM - HHMM		CNSERVATIONS	IC PHASE	TIME(UT)	CWL III	
			CWL III		HHMM - HHMM		
68/03/16	0515 - 0935		43.5 - 270.7	95.8 - 126.5			
68/03/17	0111 - 0925		46.1 - 345.3	255.6 - 329.6	1915 - 1925	303.1 - 309.0	319.7 - 321.1
68/03/18	0112 - 0925		202.7 - 135.9	103.7 - 172.5			
68/03/19	0101 - 0910		304.9 - 59.8	256.0 - 323.7			
	0520 - 0910		138.4 - 277.4	342.0 - 14.3			
68/03/20	0150 - 0905		125.8 - 207.4	146.7 - 165.9			
	0510 - 0915		278.9 - 71.1	192.3 - 218.6			
68/03/21	0145 - 0915		309.6 - 221.7	-1.3 - 61.8			
68/03/22	0110 - 0905		73.0 - 149.5	155.6 - 213.4			
	0405 - 0910		184.8 - 9.2	222.0 - 265.4	0520 - 0635	234.2 - 275.5	234.1 - 243.3
68/03/23	0145 - 0905		250.8 - 155.2	45.4 - 107.3	0900 - 0935	117.5 - 138.7	98.1 - 103.1
68/03/24	0200 - 0905		50.4 - 317.4	251.6 - 311.8			
68/03/25	0130 - 0905		182.9 - 240.3	90.2 - 143.6			
	0345 - 0900		264.5 - 54.9	105.2 - 153.9			
68/03/26	0200 - 0910		351.6 - 33.9	258.9 - 308.8			
	0510 - 0925		105.5 - 260.6	325.7 - 1.5			
68/03/27	0145 - 0920		56.8 - 172.4	130.9 - 148.7			
	0400 - 0910		214.7 - 42.1	158.5 - 202.8	1400 - 1505	214.7 - 254.0	158.6 - 167.9
68/03/28	0420 - 0905		17.4 - 185.7	5.4 - 45.4			
68/03/29	0235 - 0900		104.5 - 337.2	194.0 - 248.8	0535 - 0605	213.3 - 231.4	213.6 - 221.9
					0630 - 0705	246.6 - 267.7	227.5 - 232.5
68/03/30	0100 - 0930		197.6 - 288.2	24.1 - 45.1			
	0415 - 0900		315.5 - 127.9	51.4 - 91.5			

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS		GODDARD SPACE FLIGHT CENTER		ACTIVITY CML III	ID PHASE
		CML III	IC PHASE	TIME(UT) HHMM - HHMM			
68/03/21	0200 - 0655	24.4 - 275.3	236.5 - 255.3				
68/04/01	0110 - 0210	144.8 - 191.1	72.3 - 80.7				
	0255 - 0655	259.3 - 65.9	87.0 - 136.0				
	2100 - 2200	144.2 - 150.5	241.2 - 249.7				
68/04/02	0020 - 0135	265.1 - 310.4	259.6 - 280.2				
	0215 - 0650	274.6 - 213.4	265.9 - 361.5				
68/04/03	0400 - 0645	189.6 - 0.9	143.4 - 183.9				
68/04/04	0200 - 0840	266.6 - 148.5	230.7 - 26.8				
	2020 - 2215	211.6 - 291.2	135.4 - 141.7	2110 - 2135	241.9 - 257.0	132.4 - 136.0	
68/04/05	0005 - 0805	347.7 - 277.3	157.3 - 225.7	0625 - 0915	217.4 - 277.8	211.5 - 225.7	
68/04/06	0135 - 0800	192.6 - 65.4	13.8 - 67.9				
68/04/07	0200 - 0755	359.3 - 212.9	221.1 - 271.5				
68/04/08	0100 - 0755	112.5 - 3.4	55.6 - 114.1				
68/04/09	0200 - 0750	299.3 - 152.9	268.4 - 317.8				
68/04/10	0335 - 0750	147.3 - 301.4	124.4 - 160.7	0545 - 0730	225.9 - 289.3	142.9 - 157.8	
68/04/11	0135 - 0745	225.2 - 98.9	211.8 - 3.8	0245 - 0320	267.5 - 288.7	221.7 - 326.6	
68/04/12	0140 - 0740	19.8 - 236.4	155.4 - 206.7				
68/04/13	0300 - 0615	217.6 - 335.5	10.4 - 37.8				
68/04/14	0025 - 0050	274.4 - 289.5	192.1 - 195.7				
	0115 - 0730	304.7 - 171.4	159.2 - 252.5				
68/04/15	0005 - 0030	52.6 - 68.7	32.5 - 36.0				
	0650 - 0725	80.0 - 118.8	38.9 - 94.4	0505 - 0615	234.2 - 276.5	74.7 - 84.5	

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	22.2 GODFARC SPACE FLIGHT CENTER		ACTIVITY CML III	IO PHASE
		OBSERVATIONS CML III	IO PHASE		
68/04/16	2235 - 0430	254.0 - 3.5	257.9 - 274.1	309.1 - 315.2	261.4 - 262.8
	0440 - 0725	9.6 - 119.3	275.6 - 258.8		
68/04/17	0200 - 0625	63.3 - 223.5	55.5 - 133.0	0350 - 0405	111.0 - 113.2
68/04/18	0145 - 0715	254.8 - 44.3	237.8 - 344.1		
68/04/19	0235 - 0715	25.5 - 194.7	147.6 - 167.5		
68/04/20	0435 - 0710	254.5 - 342.2	5.7 - 30.0		
68/04/21	0225 - 0530	320.4 - 72.2	153.5 - 219.9		
	0550 - 0710	64.3 - 122.7	222.7 - 234.1		
68/04/22	0220 - 0705	107.8 - 260.1	35.9 - 76.0	0355 - 0550	49.3 - 65.4
68/04/23	0420 - 0700	33.9 - 67.6	257.1 - 279.7		
68/04/24	0110 - 0700	0.4 - 216.0	71.4 - 122.3	0350 - 0455	95.4 - 104.6
				0515 - 0610	107.4 - 115.2
68/04/26	0235 - 0425	358.8 - 65.3	131.3 - 147.5		
	0435 - 0650	71.3 - 152.9	148.9 - 168.1		
68/04/27	0425 - 0120	70.6 - 103.9	317.6 - 325.3		
	0240 - 0645	152.2 - 200.3	336.5 - 10.8		
	2335 - 2400	190.9 - 206.0	153.5 - 157.0		
68/04/28	2000 - 2300	211.4 - 320.2	327.0 - 7.8		
68/04/29	0200 - 0340	355.4 - 20.6	0.6 - 6.2		
	0100 - 0640	32.7 - 238.2	9.0 - 56.7		
	2030 - 2245	19.9 - 101.5	174.4 - 153.6		
68/04/30	0000 - 0635	146.9 - 25.6	204.3 - 260.4	0155 - 0325	220.7 - 233.4
				0425 - 0550	307.1 - 358.4
	2200 - 2340	261.0 - 285.2	38.7 - 44.3		242.0 - 254.0

DATE		TIME(UT)	OBSERVATIONS		22.2 GORDON SPACE FLIGHT CENTER		ACTIVITY		ID PHASE	
YY/MM/DD	HHMM	HHMM - HHMM	CML III	IO PHASE	TIME(UT)	HHMM - HHMM	CML III	IO PHASE	TIME(UT)	HHMM - HHMM
68/11/13	1110	1110 - 1200	226.1 - 256.4	159.0 - 165.0						
68/11/16	0900	0900 - 1045	202.5 - 202.3	21.1 - 44.5			201.8 - 269.0	30.3 - 36.7		
68/11/17	0755	0755 - 1100	345.9 - 101.8	223.2 - 249.2						
68/11/18	0750	0750 - 1200	137.3 - 288.5	66.6 - 111.9						
68/11/19	0750	0750 - 1040	267.8 - 30.5	269.0 - 293.0						
	1050	1050 - 1145	36.6 - 45.6	294.5 - 256.6						
	1140	1140 - 1200	56.8 - 78.9	301.5 - 364.4						
68/11/10	0745	0745 - 0830	75.2 - 102.4	112.5 - 118.9						
	0845	0845 - 1030	111.4 - 174.9	121.0 - 135.7						
68/11/11	0745	0745 - 1135	225.6 - 4.6	315.1 - -12.2		0820 - 0900	246.3 - 270.9	-39.9 - -34.2		
68/11/12	0750	0750 - 0815	19.1 - 34.2	159.6 - 163.1						
	0915	0915 - 1000	70.4 - 57.6	171.5 - 177.8						
	1040	1040 - 1100	121.8 - 133.3	153.4 - 186.2						
68/11/13	0740	0740 - 1100	163.5 - 264.1	1.4 - 29.9						
68/11/14	0740	0740 - 1100	313.9 - 74.8	204.5 - 232.6						
68/11/15	0735	0735 - 1100	101.3 - 225.2	47.7 - 76.8						
68/11/16	0730	0730 - 1120	248.7 - 27.8	249.5 - 282.0						
68/11/17	0730	0730 - 1150	39.2 - 196.3	53.9 - 136.4						
68/11/18	0725	0725 - 1140	186.6 - 340.7	255.6 - -28.2						
68/11/19	0725	0725 - 1150	337.0 - 137.2	139.5 - 176.7						
68/11/20	0720	0720 - 1155	124.5 - 295.7	-18.1 - 21.0						
68/11/21	0720	0720 - 1105	274.9 - 50.9	185.1 - 216.7						

12.2 STANDARD SPACE FLIGHT CENTER						
DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III		ID PHASE	ACTIVITY CML III	
					TIME(UT) HHMM - HHMM	
68/11/22	0715 - 1105	62.4 - 211.3	29.2 - 8.9			
68/11/23	0710 - 1110	215.9 - 354.5	230.1 - 264.0		0725 - 055	218.9 - 273.3 232.2 - 244.9
	1125 - 1140	3.9 - 13.0	266.1 - 268.2			
	1210 - 1215	25.1 - 36.2	271.1 - 273.2			
68/11/24	0710 - 1125	0.3 - 154.4	74.4 - 110.3			
	1140 - 1150	162.5 - 149.5	112.4 - 113.4			
68/11/25	0715 - 1115	147.7 - 268.9	276.1 - 311.6		1100 - 1115	280.7 - 298.8 309.5 - 311.6
68/11/26	0725 - 1155	252.2 - 77.2	120.2 - 152.5			
68/11/27	0710 - 1215	65.6 - 276.1	-37.0 - 7.2			
68/11/28	0710 - 1125	276.1 - 36.2	165.9 - 203.0			
68/11/29	0655 - 1115	23.5 - 174.7	9.3 - 44.2			
68/11/30	0655 - 1105	174.1 - 325.1	211.6 - 246.8		0840 - 1015	227.5 - 259.6 226.3 - 231.3
68/12/01	0651 - 1105	321.5 - 115.2	55.1 - 91.1			
68/12/02	0650 - 1100	111.5 - 243.1	257.5 - 262.9			
68/12/03	0645 - 1105	259.4 - 56.1	101.0 - 177.5			
68/12/04	0645 - 1135	49.9 - 225.2	203.7 - -15.0			
68/12/05	0640 - 1130	157.4 - 12.7	146.3 - 187.4			
68/12/06	0640 - 1210	347.8 - 159.4	-9.3 - 39.9			
68/12/07	0635 - 1130	135.2 - 113.6	192.4 - 233.9			
68/12/08	0630 - 1120	262.8 - 66.2	35.9 - 74.1			
68/12/09	0630 - 1210	73.3 - 272.9	234.3 - 285.1			

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS		22.2		GCE/ART SPACL FLIGHT CENTER		ACTIVITY CML III	ID PHASE
		CML III		ID PHASE		TIME(UT) HHMM - HHMM			
68/12/10	0630 - 1105	233.8 - 30.6		82.6 - 121.3					
68/12/11	0635 - 1115	11.3 - 156.7		264.5 - -31.4					
68/12/12	0635 - 1125	161.8 - 743.1		126.4 - 174.5		1900 - 0415	255.5 - 264.5	151.1 - 153.2	
68/12/13	0630 - 1125	309.3 - 133.6		-29.0 - 14.4		920 - 0445	64.1 - 73.2	-2.0 - 0.1	
68/12/17	0640 - 1115	276.0 - 9.7		84.7 - 116.5					
68/12/18	0535 - 1100	314.7 - 151.1		261.2 - 317.4					
68/12/19	0535 - 1120	105.2 - 313.7		105.3 - 153.7					
68/12/20	0530 - 1205	252.7 - 131.5		307.5 - 3.8					
68/12/21	0530 - 1205	43.2 - 252.0		151.1 - 21.4.5					
68/12/22	0525 - 1520	151.7 - 322.8		-5.3 - 27.5					
	0545 - 1120	347.5 - 9.1		31.0 - 36.0					
	1005 - 1200	31.2 - 69.5		40.9 - 50.1					
68/12/23	0530 - 1140	328.2 - 208.1		156.2 - 245.8					
68/12/24	0520 - 1100	128.8 - 353.5		40.4 - 94.0					
68/12/25	0515 - 1115	276.3 - 133.5		242.2 - 253.3					
68/12/26	0515 - 1110	65.9 - 261.5		55.5 - 126.3					
68/12/27	0510 - 1120	214.4 - 78.1		288.6 - -18.7					
68/12/28	0515 - 1300	1.9 - 269.1		121.6 - 198.3					
68/12/29	0505 - 1210	152.5 - 45.4		-24.8 - 35.5					
68/12/30	0505 - 1110	303.0 - 163.7		178.1 - 229.6					
68/12/31	0500 - 1110	90.6 - 318.2		21.6 - 73.9					

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	22.2 OBSERVATIONS		GODDARD SPACE FLIGHT CENTER		ACTIVITY CML III	TO PHASE
		CML III	IC PHASE	TIME(UT) HHMM - HHMM			
69/01/01	0455 - 1100	218.1 - 58.8	223.5 - 275.2	0555 - 0725 0910 - 0925	274.4 - 329.8 360.0 - 5.1	231.9 - 244.7 231.1 - 253.2	
69/01/02	0450 - 1050	250.6 - 243.3	67.1 - 117.7	0710 - 1005	117.3 - 216.1	96.8 - 111.4	
69/01/03	0450 - 1120	175.2 - 52.0	245.8 - -24.7				
69/01/04	0445 - 1150	223.8 - 220.7	113.0 - 172.6				
69/01/05	0440 - 1130	111.2 - 355.2	-44.3 - 14.0				
69/01/06	0440 - 1110	261.9 - 137.7	158.9 - 213.7				
69/01/07	0430 - 1055	52.5 - 276.2	2.9 - 56.0				
69/01/08	0435 - 1135	200.0 - 54.0	204.9 - 264.3				
69/01/09	0430 - 1130	247.6 - 241.5	48.6 - 107.6	0800 - 0915 0925 - 1015	114.6 - 123.6 129.7 - 196.2	78.1 - 86.2 81.6 - 97.1	
69/01/10	0430 - 1140	138.2 - 38.2	251.2 - -47.6				
69/01/11	0425 - 1150	285.8 - 154.8	54.6 - 157.0				
69/01/12	0435 - 1130	62.4 - 373.3	299.2 - -1.8				
69/01/15	0415 - 1135	102.1 - 68.1	186.4 - 248.6				
69/01/16	0415 - 1140	312.7 - 221.8	30.9 - 93.5	0830 - 0940	106.9 - 149.2	66.8 - 76.6	
69/01/17	0410 - 1145	100.3 - 15.4	232.7 - 297.4				
69/01/18	0410 - 1200	250.9 - 115.1	77.2 - 142.9				
69/01/19	0405 - 1215	38.5 - 334.7	276.2 - -11.0				
69/01/20	0400 - 1145	185.1 - 107.2	122.2 - 167.5				
69/01/22	0325 - 0925	106.2 - 323.8	163.9 - 214.7				
69/01/23	0620 - 1150	2.6 - 202.1	33.0 - 79.5	1025 - 1050	150.7 - 165.8	67.5 - 71.0	

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	22.2		GODDARD SPACE FLIGHT CENTER		ACTIVITY CML III	TO PHASE
		OBSERVATIONS CML III	IO PHASE	TIME(UT) HHMM - HHMM	IO PHASE		
69/01/24	0620 - 1145	153.2 - 349.7	235.6 - 281.9	0810 - 1335 0910 - 1402	215.7 - 234.9 256.1 - 262.1	251.2 - 254.8 259.8 - 261.2	
69/01/25	0615 - 1210	303.8 - 155.5	79.2 - 128.9				
69/01/26	0610 - 1150	68.4 - 254.0	281.6 - 30.0				
69/01/27	0605 - 1205	236.1 - 53.7	124.4 - 175.0				
69/01/28	0600 - 1150	23.7 - 235.3	-32.4 - 17.3				
69/01/29	0600 - 1130	174.3 - 12.8	170.5 - 217.0				
69/01/30	0600 - 1150	125.1 - 176.6	14.9 - 64.2				
69/01/31	0550 - 1150	109.6 - 327.2	216.1 - 267.2	0940 - 1040	212.3 - 248.6	240.2 - 249.7	
69/02/01	0545 - 1145	257.2 - 114.8	59.7 - 110.2				
69/02/02	0540 - 1140	44.8 - 262.5	262.0 - 46.7				
69/02/03	0535 - 1135	152.4 - 50.1	105.1 - 155.6	0735 - 1300	255.0 - 230.1	121.9 - 125.4	
69/02/05	0530 - 1130	130.7 - 348.4	151.1 - 261.8	0910 - 1005	227.5 - 260.7	173.6 - 181.4	
69/02/06	0525 - 1125	278.4 - 136.0	-5.3 - 45.6				
69/02/07	0520 - 1135	66.0 - 256.5	156.7 - 241.3	0935 - 1050	183.9 - 229.2	224.3 - 234.9	
69/02/08	0520 - 1120	215.7 - 74.3	41.1 - 91.7				
69/02/09	0630 - 1115	49.5 - 222.0	253.9 - 294.5				
69/02/10	0515 - 1110	148.5 - 9.6	85.9 - 137.6	0505 - 0555	148.9 - 179.2	85.9 - 92.9	
69/02/11	0510 - 1110	236.6 - 154.2	288.6 - 20.1				
69/02/12	0205 - 1120	341.4 - 317.0	107.4 - 185.4	0855 - 0930	220.3 - 250.5	164.9 - 169.9	
69/02/13	0205 - 1155	132.1 - 128.8	-46.9 - 34.8				

2242		GODDARD SPACE FLIGHT CENTER		OBSERVATIONS		IC PHASE		TIME (UT)		ACTIVITY		IN PHASE	
CAT.	TIME (UT)	CUL III	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM
69/12/14	112	276.7 - 258.3	151.5 - 232.7	1130 - 1140	228.1 - 245.3	225.6 - 229.8							
69/12/15	112	57.4 - 49.0	-2.8 - 76.8										
69/12/16	114	215.1 - 214.9	195.1 - 222.7										
69/12/17	115	5.7 - 35.3	43.6 - 120.1	0815 - 0920	236.5 - 277.8	97.6 - 106.7							
69/12/18	115	153.4 - 150.1	245.9 - 37.2	0430 - 0500	253.2 - 271.3	269.3 - 273.6							
69/12/19	115	31.0 - 288.7	85.0 - 169.8	0930 - 1005	225.2 - 245.4	155.0 - 159.9							
69/12/20	112	89.7 - 82.4	251.3 - 15.0										
69/12/21	115	239.4 - 219.0	135.1 - 214.2										
69/12/22	115	39.1 - 14.7	-18.4 - 59.9										
69/12/23	115	250.3 - 171.5	158.4 - 264.5										
69/12/24	112	10.7 - 168.1	35.8 - 72.4										
69/12/25	115	169.1 - 325.2	77.3 - 108.8										
69/12/26	115	209.8 - 255.2	251.1 - 260.8										
69/12/27	115	279.3 - 112.8	266.5 - 47.9										
69/12/28	115	265.8 - 257.5	72.9 - 153.6	1800 - 1105	218.2 - 257.5	144.5 - 153.6							
69/12/29	115	48.4 - 187.5	273.5 - 306.3										
69/12/30	115	153.5 - 57.2	377.7 - 0.2										
69/12/31	115	52.6 - 245.5	-14.8 - 45.2										
69/12/32	115	143.5 - 317.2	164.7 - 219.9	0320 - 0350	219.1 - 237.2	182.2 - 186.5							
69/12/33	115	16.3 - 131.2	215.1 - 245.1										
69/12/34	115	140.2 - 161.4	248.3 - 253.3										
69/12/35	115	291.2 - 7.0	8.4 - 45.8										

DATE YY/MM/DD	TIME (LT) HHMM - HHMM	OBSERVATIONS		22.2		GODDARD SPACE FLIGHT CENTER		ACTIVITY		IC PHASE
		CML III	TIME (UT) HHMM - HHMM	CML III	TIME (UT) HHMM - HHMM	TIME (UT) HHMM - HHMM	TIME (UT) HHMM - HHMM	CML III	TIME (UT) HHMM - HHMM	
69/03/03	051 - 111	76.3 - 203.4		42.2 - 62.8						
69/03/04	0145 - 112	1.3 - 54.4		216.1 - 269.5		44 - 152		218.8 - 233.0		241.0 - 246.7
69/03/05	050 - 145	309.1 - 220.2		71.9 - 136.1						
69/03/07	030 - 050	98.1 - 116.2		168.4 - 172.6						
	0945 - 1055	125.3 - 107.6		174.7 - 184.6						
69/03/09	0715 - 090	64.1 - 254.4		144.3 - 181.7						
	0510 - 1105	240.4 - 115.1		183.1 - 223.5						
69/03/10	0140 - 103	234.1 - 256.7		-2.7 - 75.4						
69/03/11	060 - 1055	222.1 - 50.4		237.7 - 279.7		060 - 0445		222.0 - 250.2		237.7 - 244.1
69/03/12	0225 - 0335	252.7 - 295.0		51.4 - 61.2						
	040 - 0545	328.3 - 13.7		69.9 - 75.4						
	0635 - 090	40.9 - 161.6		87.8 - 113.8		705 - 0725		62.1 - 74.1		91.6 - 93.5
	1005 - 113	170.9 - 222.3		115.9 - 127.8						
69/03/13	0040 - 0855	145.4 - 315.9		160.2 - 205.1						
69/03/13	0045 - 1055	176.4 - 361.2		266.0 - 32.7						
69/03/14	0025 - 0215	121.5 - 185.1		51.4 - 66.8		0105 - 0215		145.7 - 188.1		47.1 - 94.9
	0205 - 110	219.3 - 145.5		103.8 - 174.7						
69/03/15	020 - 052	347.8 - 91.6		303.0 - 32.9						
	0555 - 1115	111.8 - 05.2		-27.6 - 17.4						
69/03/16	022 - 1055	122.5 - 83.2		144.5 - 217.4						
69/03/17	0045 - 103	235.7 - 213.4		-24.5 - 56.6						
69/03/18	0355 - 102	131.3 - 4.1		205.2 - 261.1		0640 - 0745		231.0 - 270.3		228.6 - 237.9
69/03/19	0355 - 1045	351.5 - 149.3		65.5 - 1.7		0930 - 1015		124.5 - 151.7		96.4 - 102.7

DATE YY/MM/DD	TIME (LT) HHMM - HHMM	22.2 OBSERVATIONS		GOLDARD SPACE FLIGHT CENTER		ACTIVITY CML III	IO PHASE
		CML III	IO PHASE	TIME (UT) HHMM - HHMM	IO PHASE		
68/03/20	0627 - 1101	163.2 - 253.3	273.4 - 304.8				
68/03/21	0245 - 0820	161.0 - 23.5	86.5 - 133.5				
68/03/22	0130 - 1125 0225 - 1101	250.7 - 283.3 319.6 - 271.0	271.2 - 279.0 287.6 - 1.6				
68/03/23	0430 - 1120	165.8 - 27.5	148.2 - 197.7				
68/03/24	0301 - 1540 0621 - 1211	282.1 - 14.8 43.7 - 254.6	-20.0 - 2.6 8.3 - 57.5				
68/03/25	0101 - 0715 0530 - 0535 0900 - 1555 1110 - 1120	223.6 - 53.9 145.3 - 165.5 200.4 - 323.7 332.8 - 15.1	157.2 - 167.6 153.7 - 204.7 213.9 - 241.7 243.8 - 253.8	0900 - 1055 1130 - 1055	250.4 - 323.7 344.8 - 360.0	233.9 - 241.7 246.7 - 250.3	
68/03/26	0101 - 1115 0220 - 1130	120.6 - 183.9 160.2 - 135.5	3.2 - 10.9 21.5 - 60.3				
68/03/27	0445 - 1120	77.6 - 280.1	245.1 - 252.9				
68/03/28	0420 - 0555	217.1 - 55.7	85.2 - 132.3				
68/03/29	0225 - 0405 0440 - 0725 0745 - 1135	254.2 - 264.7 15.9 - 115.7 127.8 - 230.5	272.8 - 287.1 292.0 - 315.5 -41.7 - -17.6				
68/03/30	0415 - 0805 0830 - 0945	151.5 - 250.5 275.6 - 231.0	171.4 - 163.9 167.4 - 178.0				
68/03/31	0225 - 1115	235.6 - 155.8	-39.7 - 26.7				
68/04/01	0155 - 1135	153.2 - 358.8	192.8 - 241.2				
68/04/02	0455 - 1020	247.6 - 104.1	28.7 - 74.3				

DATE YY/MM/DD	TIME(UT)		OBSERVATIONS CML III	22.2 GOLFARD SPACE FLIGHT CENTER		ACTIVITY CML III	ID PHASE
	HHMM - HHMM	TIME(UT) HHMM - HHMM		ID PHASE	TIME(UT) HHMM - HHMM		
69/04/03	0530 - 1045		79.4 - 269.9	236.8 - 281.7			
69/04/04	0105 - 0240		69.9 - 127.2	43.3 - 56.6			
69/04/04	0338 - 1105		160.6 - 72.6	64.3 - 127.5			
69/04/05	0110 - 1115		235.6 - 223.2	250.2 - 28.			
69/04/06	0015 - 0310		334.9 - 85.7	81.7 - 106.2			
69/04/06	0315 - 1051		99.8 - 4.9	119.3 - 172.5	165F - 0735	222.8 - 247.0	130.2 - 144.9
69/04/09	0415 - 0810		219.1 - 254.1	8.4 - 41.7			
69/04/09	0830 - 0530		12.1 - 60.5	44.2 - 55.4			
69/04/10	0355 - 1000		354.5 - 217.2	208.4 - 261.4			
69/04/11	0450 - 0520		180.4 - 158.5	61.1 - 64.4			
69/04/11	0625 - 1000		237.8 - 7.8	71.5 - 103.6			
69/04/12	0105 - 0130		195.0 - 210.1	231.8 - 235.3			
69/04/12	0140 - 0545		216.1 - 149.4	236.7 - 305.8	0140 - 0240	216.1 - 252.4	236.7 - 245.3
69/04/13	0245 - 0445		46.1 - 113.6	89.4 - 106.3			
69/04/13	0530 - 0540		145.8 - 297.0	112.6 - 147.8			
69/04/14	0330 - 0420		217.8 - 254.1	256.5 - 307.0			
69/04/14	0610 - 0545		327.6 - 50.5	-37.4 - -7.0			
69/04/16	0245 - 0345		137.9 - 174.2	-19.1 - -10.7			
69/04/16	0410 - 0540		189.5 - 243.7	-7.2 - 5.5			
69/04/18	0225 - 0530		97.1 - 178.9	25.0 - 51.1			
69/04/18	0120 - 0700		33.3 - 93.7	184.8 - 199.0	2145 - 2250	48.4 - 87.7	189.2 - 197.6
69/04/19	0130 - 0215		154.4 - 211.5	220.3 - 226.8			
69/04/19	0240 - 0920		226.7 - 108.5	230.3 - 267.3			
69/04/20	0230 - 0510		11.3 - 203.1	72.5 - 128.7	0540 - 0610	125.1 - 144.3	90.1 - 103.4

DATE		TIME(UT)		OBSERVATIONS		GODDARD SPACE FLIGHT CENTER		ACTIVITY	
YY/MM/DD		HHMM	HHMM	CML III	IC PHASE	TIME(UT)	HHMM - HHMM	CML III	IO PHASE
65/04/21		0335	- 0910	164.0 - 43.7	277.1 - -26.8				
65/04/22		0520	- 0905	55.2 - 191.3	143.3 - 175.1				
65/04/23		0315	- 0900	130.3 - 338.6	-29.9 - 18.7				
65/04/24		0345	- 0900	259.0 - 129.4	177.0 - 221.9				
65/04/25		0325	- 0858	41.2 - 277.0	13.1 - 64.8				
65/04/26		0310	- 0850	219.0 - 64.5	219.5 - 267.6	0325 - 0440		228.1 - 273.4	221.6 - 232.3
						0505 - 0710		288.5 - 4.1	235.9 - 253.7
65/04/27		0300	- 0755	76.1 - 181.9	78.6 - 103.1	0605 - 0725		115.4 - 163.7	87.7 - 98.9
65/04/28		0335	- 0850	175.2 - 5.7	270.6 - 315.3				
		2335	- 2115	71.9 - 56.1	54.5 - 67.1				
65/04/29		0100	- 0150	195.9 - 242.3	63.2 - 98.7				
		0205	- 0800	271.4 - 153.2	100.8 - 156.5				
65/04/30		0325	- 0835	110.3 - 257.7	216.4 - 1.2	0725 - 0735		255.4 - 261.5	-9.7 - -8.3
		2050	- 2140	22.1 - 52.3	103.3 - 110.4				
65/05/01		0210	- 0835	215.6 - 58.3	148.4 - 203.1				
65/05/02		0335	- 0830	57.5 - 235.8	4.8 - 46.2				
65/05/03		0335	- 0830	208.0 - 26.4	207.8 - 249.9				
65/05/04		0215	- 0825	210.2 - 173.5	47.3 - 92.2				
65/05/05		0330	- 0820	146.1 - 321.4	254.6 - 295.8	0555 - 0610		233.9 - 242.8	275.2 - 277.3
						0625 - 0655		251.9 - 270.0	279.5 - 283.7
65/05/06		0350	- 0815	308.7 - 102.9	105.4 - 136.3				
65/05/07		0240	- 0835	57.0 - 180.9	294.8 - -26.2				
		0615	- 0630	186.9 - 196.1	-34.8 - -32.6				

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS		22.2 GECARD SPACE FLIGHT CENTER		ACTIVITY CML III	IC PHASE	TIME(UT)		IC PHASE
		CML III						HHMM - HHMM		
69/05/07	0650 - 0815	20.8.1	- 250.5	25.0.8	- 17.8					
69/05/08	0320 - 0620	231.07	- 240.5	143.1	- 158.0					
	0645 - 0810	255.6	- 47.1	172.1	- 18.2					
69/05/09	0350 - 0805	41.3	- 154.5	- 8.3	- 27.5					
69/05/10	0205 - 0730	127.4	- 336.0	175.6	- 222.7					
69/05/11	0230 - 0745	353.1	- 123.5	27.2	- 71.4					
69/05/12	0415 - 0745	147.1	- 274.0	245.6	- 275.4					
69/05/13	0640 - 0730	25.2	- 67.5	175.7	- 118.8					
	0740 - 0800	135.7	- 215.9	215.6	- 69.6					
69/05/14	0235 - 0745	27.6	- 215.0	275.8	- 27.5					
	0715 - 0800	144.7	- 48.1	75.3	- 51.7					
69/05/15	0300 - 0530	133.2	- 277.8	144.9	- 144.6					
	0535 - 0740	266.9	- 2.5	146.7	- 164.5					
69/03/15	1925 - 2400	241.5	- 47.8	86.2	- 124.8					
69/03/16	0017 - 0740	53.8	- 325.9	124.2	- 180.7					
	1940 - 2400	41.3	- 195.5	292.2	- 53.9					
69/03/17	0010 - 0740	274.5	- 116.2	- 25.4	- 34.1					
	1915 - 2400	176.9	- 345.2	131.7	- 171.9					
69/03/18	0010 - 0730	355.2	- 261.3	173.3	- 235.8					
69/05/18	2050 - 2225	211.5	- 265.0	156.6	- 18.1					
	2250 - 0725	264.1	- 84.9	183.6	- 53.1					
69/05/20	0355 - 0825	258.9	- 313.3	70.3	- 82.0					
	0540 - 0720	122.4	- 22.9	55.7	- 50.1					

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS		ID PHASE	TIME(UT) HHMM - HHMM	ACTIVITY CWL III	ID PHASE
		CWL III					
69/05/21	0535 - 0715 1905 - 2130	170.9 - 170.3 230.6 - 227.2	288.6 - 312.7 42.6 - 62.9				
69/05/22	0140 - 0715	118.3 - 320.6	98.0 - 145.3		0140 - 0225 0305 - 0315	119.3 - 145.5 169.7 - 175.7	98.0 - 174.3 117.0 - 111.4
69/05/23	0300 - 0425	317.1 - 6.5	313.7 - -34.3				
69/05/30	0235 - 0335 0335 - 0430	275.2 - 293.4 311.5 - 57.3	294.4 - 298.6 302.8 - -32.5				
69/05/31	0315 - 0625	102.0 - 220.7	145.4 - 169.5				
69/06/05	0120 - 0610	52.5 - 227.8	63.7 - 174.5		0350 - 0530	143.2 - 203.7	94.7 - 96.8
69/06/06	0310 - 0610	249.5 - 16.3	283.4 - 348.8				
69/06/07	0400 - 0610	51.1 - 168.7	133.0 - 151.4				
69/06/08	0325 - 0600	219.4 - 313.1	-27.7 - -5.5				
69/06/09	0210 - 0220	318.4 - 330.5	163.0 - 165.8				

22.2 CLARK LAKE RADIC OBSERVATORY			
DATE	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	IO PHASE
65/02/05	0805 - 1405	224.4 - 82.1	172.9 - 223.8
69/02/06	0800 - 1400	12.1 - 229.7	16.7 - 67.4
65/02/07	0645 - 1200	117.4 - 307.8	208.7 - 253.4
69/02/08	0755 - 1355	310.4 - 168.0	62.9 - 113.4
69/02/09	0745 - 1340	95.0 - 305.6	264.6 - 44.8
69/02/10	0745 - 1340	245.7 - 100.3	108.3 - 158.1
69/02/11	0740 - 1335	33.3 - 248.0	-48.6 - 1.8
69/02/12	0735 - 1330	181.0 - 35.6	153.7 - 203.8
69/02/13	0730 - 1320	328.6 - 180.2	-2.6 - 46.8
65/02/14	0730 - 1325	119.3 - 333.9	200.0 - 250.4
69/02/15	0725 - 1325	266.9 - 124.6	43.8 - 54.2
65/02/16	0720 - 1320	54.6 - 272.3	246.0 - 297.3
65/02/17	0715 - 1315	202.2 - 55.9	89.2 - 139.7
69/02/18	0710 - 1310	349.9 - 207.6	292.1 - -16.7
69/02/19	0705 - 1305	137.6 - 355.2	134.6 - 185.2
69/02/20	0700 - 1300	285.2 - 142.9	-21.8 - 29.1
69/02/21	0700 - 1255	75.9 - 290.5	180.9 - 231.2
69/02/22	0655 - 1250	223.6 - 78.2	24.7 - 74.6
65/02/23	0650 - 1245	11.2 - 225.9	226.8 - 277.4
69/02/24	0645 - 0950	158.9 - 270.7	70.3 - 56.2

ACTIVITY CML III	TIME(UT) HHMM - HHMM	IO PHASE
220.2 - 262.5	0935 - 1045	232.8 - 242.7
238.5 - 259.7	0815 - 0850	97.6 - 102.5

DATE		TIME(UT)	OBSERVATIONS		CLARK LAKE RADIO OBSERVATORY		ACTIVITY	IO PHASE	
YY/MM/DD	HHMM - HHMM	HHMM - HHMM	CWL III	IC PHASE	TIME(UT)	CWL III	HHMM - HHMM		
65/02/24	1005 - 1240		275.3 - 13.5	50.3 - 120.0					
69/02/25	0640 - 1235		306.0 - 404.2	272.3 - -26.5					
69/02/26	0635 - 1230		94.2 - 308.9	115.7 - 165.6					
69/02/27	0630 - 1230		241.9 - 55.6	-40.3 - 10.1					
69/02/28	0630 - 1230		32.0 - 250.2	161.9 - 212.8					
65/03/01	0625 - 1220		180.2 - 34.9	5.7 - 55.7					
65/03/02	0620 - 1215		327.9 - 182.6	207.7 - 258.2					
69/03/03	0615 - 0825		115.0 - 154.2	51.4 - 69.6					
6505 - 1210			224.4 - 330.2	70.6 - 101.2					
65/03/04	0610 - 1205		263.2 - 117.9	253.3 - 304.4					
69/03/05	0605 - 1200		50.9 - 265.6	56.8 - 146.7					
65/03/11	0535 - 1125		216.9 - 74.6	234.1 - 285.4	0625 - 0645	247.1 - 259.2		241.2 - 244.1	
65/03/12	0535 - 1120		7.6 - 222.3	78.0 - 127.8					
69/03/13	0530 - 1125		155.3 - 9.9	281.0 - -28.5					
69/03/16	0520 - 1115		241.3 - 55.9	169.9 - 220.2					
65/03/17	0515 - 1110		25.0 - 243.6	13.7 - 63.6					
69/03/18	0510 - 1105		176.6 - 31.3	215.8 - 266.4					
65/03/19	0505 - 1100		324.3 - 178.9	59.3 - 109.1	0925 - 1020	121.5 - 154.7		55.7 - 103.4	
69/03/20	0500 - 1055		111.9 - 326.6	262.0 - 312.6					
69/03/21	0455 - 1050		255.0 - 114.2	104.7 - 154.7					
69/03/22	0530 - 1045		71.4 - 261.9	313.9 - -1.5					

DATE YR/MN/DO	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	22.2 CLARK LAKE RADIO OBSERVATORY		ACTIVITY CML III	IO PHASE
			IC PHASE	TIME (UT) HHMM - HHMM		
65/03/23	C60C - 1045	240.2 - 52.6	160.9 - 201.3			
65/03/24	C44E - C620	345.6 - 43.0	-5.2 - 8.3			
	C23C - 1040	49.1 - 200.2	9.7 - 44.0			
65/03/25	C440 - 1050	133.2 - 356.9	150.9 - 249.5	0905 - 0925 1040 - 1050	293.5 - 305.5 350.9 - 356.9	234.6 - 237.4 248.1 - 249.5
65/03/26	C54C - 1050	320.2 - 135.5	49.6 - 50.3			
65/03/27	C430 - C625	68.5 - 138.1	243.0 - 259.4			
	C64C - 1025	147.1 - 283.2	261.5 - 293.6			
65/03/28	C51C - 1020	243.4 - 70.8	92.3 - 135.8			
65/03/29	C52E - C61C	43.1 - 70.3	258.5 - 304.9			
	C53C - 1015	82.4 - 218.5	307.7 - 20.4			
65/03/30	C43E - 1010	163.5 - 6.1	134.3 - 181.6			
65/03/31	C430 - C45C	311.2 - 323.3	-21.9 - -19.1			
	C54C - C710	353.5 - 47.9	-12.0 - 0.7			
	0900 - 1005	114.4 - 153.7	10.2 - 25.3			
65/04/01	C52C - 1005	132.1 - 304.4	107.8 - 228.4			
65/04/02	C720 - 1000	355.3 - 92.0	49.0 - 71.5			
65/04/03	041E - C445	34.1 - 52.2	226.1 - 230.4			
	C520 - C555	73.4 - 239.7	235.4 - 274.6			
65/04/04	C43E - C635	196.8 - 341.9	72.7 - 106.4			
	C52E - C550	12.2 - 27.3	113.4 - 116.9			
65/04/05	C56C - C545	2.6 - 174.9	280.1 - -39.4			
65/04/06	C50C - C945	151.2 - 325.6	123.1 - 162.3			

DATE		TIME(UT)		OBSERVATIONS		22.2		CLARK LAKE RADIO OBSERVATORY		ACTIVITY	
YY/MM/CC		HHMM - HHMM		CML III		IO PHASE		TIME(UT)		CML III	
		HHMM - HHMM						HHMM - HHMM			
66/04/07	0500 - 0940	303.9	- 113.2	-32.4	- 7.1						
69/04/08	C33E - C400	43.1	- 58.2	158.2	- 161.7						
	C42E - C440	73.4	- 82.4	165.3	- 167.4						
	0700 - 0935	167.1	- 260.8	167.2	- 209.3						
66/04/09	C500 - 0920	245.2	- 48.4	14.7	- 52.6						
66/04/10	0415 - 0925	8.6	- 196.0	211.3	- 255.4						
66/04/11	C32E - C520	129.0	- 343.6	48.2	- 98.0						
66/04/12	0320 - 0710	276.6	- 55.7	25.0	- 283.8						
	0740 - 0515	73.8	- 131.2	288.0	- 301.5						
68/04/13	C31E - C355	64.2	- 88.4	53.6	- 99.2						
	C410 - 0910	97.5	- 278.8	101.3	- 143.6						
66/04/14	0700 - 0905	350.9	- 66.4	-10.3	- 12.6						
68/04/15	C51E - 0920	78.0	- 195.9	127.5	- 185.2						
	C650 - 0900	208.0	- 214.0	188.0	- 189.4						
69/04/16	C330 - C655	165.1	- 1.6	-12.8	- 32.9						
66/04/17	C300 - 0850	297.6	- 149.2	185.7	- 235.5						
66/04/18	C25E - 0850	85.2	- 299.8	29.2	- 79.0						
66/04/19	C440 - 0710	295.3	- 30.0	247.4	- 268.8						
	C630 - 0845	76.3	- 27.4	280.2	- 282.3						
66/04/20	C42E - 0840	80.8	- 235.0	88.6	- 124.5			0545 - 0605	129.2 - 141.3	55.8 - 102.7	
66/04/21	041E - 0445	225.4	- 243.5	201.4	- 295.6						
	C530 - 0720	270.7	- 337.2	358.0	- 317.6						
	0800 - 0820	1.4	- 32.5	-36.7	- 31.9						

DATE		TIME(UT)	OBSERVATIONS		22.2 CLARK LAKE RADIO OBSERVATORY		ACTIVITY	IO PHASE
YY/MM/DD	HHMM - HHMM		CML III		IO PHASE	TIME(UT)	CML III	
						HHMM - HHMM		
65/04/22	C520 - C645		55.2 - 106.6		143.3 - 155.3			
	C700 - 0825		115.7 - 167.1		157.4 - 169.5			
65/04/23	C345 - C410		148.4 - 163.5		-25.6 - -22.1			
	C435 - C720		178.6 - 278.4		-18.6 - 4.7			
	C750 - C830		296.5 - 320.7		8.9 - 14.5			
65/04/24	C345 - C755		269.0 - 90.1		177.0 - 212.6			
65/04/25	C515 - C820		144.0 - 255.8		33.9 - 59.9			
65/04/26	C400 - C430		245.2 - 267.4		225.6 - 230.9			
	C500 - C815		285.5 - 43.4		233.2 - 263.0	0530 - 0555	303.6 - 318.7	239.4 - 243.0
65/04/27	C235 - C305		348.4 - 6.5		58.2 - 62.4			
	C335 - C810		24.7 - 190.9		65.6 - 105.2	0600 - 0650	112.3 - 142.6	87.0 - 94.0
65/04/28	C435 - C645		211.5 - 290.1		279.1 - 297.6			
	C710 - C805		305.2 - 338.5		301.1 - 308.9			
65/05/03	C345 - C745		214.1 - 359.2		209.2 - 243.4			
65/05/04	C330 - C740		355.6 - 146.7		50.9 - 85.9			
65/05/05	C200 - C735		51.7 - 294.2		241.7 - 289.4			
65/05/06	C230 - C330		260.4 - 286.7		89.1 - 57.6			
	C345 - C530		305.7 - 9.2		99.7 - 114.4			
	C540 - C615		15.2 - 36.4		115.8 - 140.8			
	C630 - C725		45.5 - 78.7		122.9 - 130.6			
65/05/07	C245 - C730		60.0 - 232.3		255.5 - -24.2			
65/05/08	C400 - C515		255.9 - 301.2		148.7 - 159.3			
	C530 - C725		310.3 - 19.8		181.5 - 177.8			
65/05/09	C400 - C720		46.4 - 167.3		-6.9 - 21.2			

DATE VF/MM/DC	TIME(UT) HHMM - HHMM	22.2 OBSERVATIONS CML III		CLARK LAKE RADIO OBSERVATORY		ACTIVITY CML III	IO PHASE
		HHMM - HHMM	HHMM - HHMM	IO PHASE	TIME(UT) HHMM - HHMM		
69/05/10	C300 - 0350	186.6 - 190.9	187.4 - 194.6				
	C430 - 0715	215.1 - 314.8	200.3 - 223.8		0430 - 0510	215.1 - 239.2	200.3 - 215.9
69/05/11	C230 - 0630	293.0 - 78.1	27.2 - 60.8				
	C645 - 0715	87.2 - 105.3	62.9 - 67.1				

22.2 KAUAI, HAWAII									
DATE YR/MM/DD	TIME(UT)		OBSERVATIONS CML III	IO PHASE	TIME(UT)		ACTIVITY CML III	IO PHASE	
	HHMM	HHMM			HHMM	HHMM			
67/11/10	1430	1815	339.1 - 105.1	238.3 - 270.3	1515	1525	356.3 - 2.3	244.7 - 246.1	
67/11/11	1135	1715	13.8 - 219.3	57.8 - 105.5	1420	1630	113.5 - 192.1	81.0 - 99.2	
	1725	1820	225.3 - 256.6	100.9 - 114.6					
67/11/12	1150	1640	173.3 - 61.2	262.7 - 321.0	1315	1400	224.7 - 251.9	274.8 - 281.2	
67/11/13	1205	1800	332.9 - 187.5	108.5 - 158.2					
67/11/14	1130	1330	102.3 - 174.8	307.0 - 324.1	1530	1545	129.4 - 138.5	74.6 - 76.7	
	1500	1810	239.2 - 344.1	336.9 - 3.8					
67/11/15	1110	1125	240.7 - 255.8	147.2 - 150.7	1620	1650	159.6 - 177.8	81.6 - 85.9	
	1210	1700	277.0 - 92.3	155.6 - 196.4					
67/11/16	1115	1705	34.2 - 245.8	-8.0 - 41.4	1240	1345	209.8 - 249.1	190.4 - 199.5	
67/11/18	1420	1700	87.1 - 183.8	64.8 - 67.3					
67/11/19	1415	1700	234.6 - 334.3	267.0 - 290.5	1640	1700	145.4 - 157.5	68.4 - 71.2	
67/11/20	1410	1650	22.1 - 118.8	109.9 - 132.3					
67/11/21	1410	1655	172.6 - 272.4	313.5 - 337.0	1410	1500	205.3 - 235.5	250.2 - 257.3	
67/11/22	1405	1700	320.1 - 65.9	155.6 - 180.3					
67/11/23	1120	1335	10.9 - 92.5	336.5 - -4.4	1230	1255	295.4 - 310.5	75.9 - 83.4	
	1410	1705	113.7 - 215.5	0.6 - 25.3					
67/11/24	1055	1345	146.3 - 249.1	173.5 - 199.5	1640	1700	145.4 - 157.5	68.4 - 71.2	
67/11/25	1355	1700	255.2 - 7.0	201.0 - 227.2					
	1045	1700	240.8 - 137.5	18.5 - 71.2	1410	1500	205.3 - 235.5	250.2 - 257.3	
67/11/26	1040	1700	78.4 - 308.1	220.3 - 274.4					
67/11/27	1045	1700	231.9 - 98.6	65.2 - 117.7	1240	1345	209.8 - 249.1	190.4 - 199.5	

22.2 KAUAI, HAWAII

DATE YR/MO/CD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	IO PHASE	TIME(UT) HHMM - HHMM	ACTIVITY CML III	IO PHASE
67/11/28	1050 - 1200 1215 - 1240 1335 - 1700	25.5 - 67.8 76.9 - 92.0 125.2 - 249.2	268.9 - 278.9 281.0 - 284.6 292.4 - 321.6	1640 - 1700	237.1 - 249.2	318.8 - 321.6
67/11/29	1045 - 1700	173.0 - 35.7	111.6 - 164.3	1130 - 1150 1200 - 1350 1420 - 1455	200.2 - 212.3 218.4 - 284.9 303.0 - 324.2	117.9 - 120.7 122.1 - 137.6 141.8 - 146.7
67/11/30	1030 - 1700	314.5 - 190.3	313.3 - 8.6			
67/12/01	1040 - 1430 1455 - 1700	111.1 - 250.2 265.3 - 340.8	157.5 - 189.9 193.5 - 211.2	1335 - 1400 1455 - 1520	216.9 - 232.0 265.3 - 280.4	182.2 - 185.7 193.5 - 197.0
67/12/02	1035 - 1700	258.6 - 131.4	1.1 - 55.4			
67/12/03	1030 - 1700	46.2 - 282.0	202.9 - 258.3	1620 - 1635	257.8 - 266.8	252.6 - 254.8
67/12/04	1020 - 1700	190.7 - 72.5	45.8 - 101.9			
67/12/05	1015 - 1300 1325 - 1700	338.3 - 78.0 93.1 - 223.1	248.0 - 271.5 275.0 - 305.6			
67/12/06	1015 - 1700	128.8 - 13.7	51.6 - 148.5	1020 - 1135	131.8 - 177.2	92.3 - 102.9
67/12/07	1115 - 1700	315.7 - 164.2	303.8 - -7.2			
67/12/08	1010 - 1700	67.0 - 314.8	137.5 - 195.3	1415 - 1515	215.1 - 251.3	172.0 - 180.5
67/12/09	1005 - 1705	214.5 - 108.4	-19.0 - 40.3			
67/12/10	1000 - 1215 1310 - 1415 1445 - 1700	2.1 - 83.7 116.9 - 156.2 174.4 - 256.0	182.9 - 202.0 209.8 - 219.0 223.3 - 242.5			
67/12/11	0655 - 1550 1605 - 1700	149.6 - 4.3 13.3 - 46.6	26.6 - 76.4 78.5 - 86.2			
67/12/12	0550 - 1705	297.2 - 200.2	228.6 - 290.5	1040 - 1100 1140 - 1200	327.4 - 339.5 3.7 - 15.8	235.7 - 238.5 244.2 - 247.1

22.2 KAUAI, HAWAII

DATE YR/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	IO PHASE	TIME(UT) HHMM - HHMM	ACTIVITY CML III	IO PHASE
67/12/13	0945 - 1700	84.8 - 347.8	71.8 - 132.8	1110 - 1245 1420 - 1510	136.2 - 193.6 251.0 - 281.3	83.7 - 97.0 110.3 - 117.3
	0945 - 1235	235.4 - 338.1	275.2 - 299.4	1045 - 1105	271.6 - 283.7	283.8 - 286.6
	1250 - 1745	347.2 - 165.6	301.5 - -16.6			
67/12/15	0940 - 1740	22.9 - 313.1	117.7 - 185.3	1515 - 1600	225.5 - 252.7	164.8 - 171.1
67/12/16	1235 - 1405	279.3 - 333.7	-13.4 - -0.7			
	1440 - 1815	354.9 - 137.0	4.3 - 37.4			
67/12/17	1235 - 1650	69.9 - 224.1	189.2 - 225.4			
67/12/18	1225 - 1700	214.5 - 20.8	32.1 - 70.7			
67/12/19	0940 - 1705	265.3 - 174.4	211.5 - 274.9	1120 - 1200	325.8 - 350.0	225.7 - 231.4
67/12/20	0920 - 1015	43.9 - 77.1	53.8 - 60.5			
	1030 - 1145	86.2 - 131.5	62.6 - 73.1	1035 - 1120	89.2 - 116.4	63.3 - 69.6
	1200 - 1700	140.6 - 322.0	75.2 - 117.3	1210 - 1315	146.6 - 185.9	76.6 - 85.7
68/01/20	0715 - 0940	318.5 - 46.1	224.7 - 245.4			
	0550 - 1030	52.2 - 76.4	246.8 - 252.5			
	1100 - 1800	54.5 - 348.5	256.8 - 316.5			
68/01/21	0750 - 0940	130.3 - 196.8	73.3 - 88.7			
	1005 - 1025	211.9 - 224.0	92.2 - 95.1			
	1045 - 1800	236.1 - 139.1	57.9 - 159.2			
68/01/22	0705 - 1345	253.8 - 135.6	270.9 - 327.7			
	1425 - 1815	159.8 - 298.9	333.3 - 5.8			
68/01/23	0845 - 1410	104.9 - 301.4	127.9 - 173.9			
	1425 - 1710	310.5 - 50.3	176.0 - 199.5			
68/01/24	0800 - 0855	228.4 - 261.7	326.1 - 333.9			

22.2 KAUAI, HAWAII			
DATE YY/MM/CL	TIME(UT) HHMM - HHMM	OBSERVATIONS CWL III	IC PHASE
68/01/24	0525 - 1800	275.8 - 231.2	338.1 - 50.5
68/01/25	0730 - 1030 1045 - 1800	1.6 - 109.8 118.5 - 21.9	164.5 - 190.1 152.2 - 254.2
68/01/26	0845 - 0945 1000 - 1715	197.0 - 233.3 242.3 - 169.5	19.5 - 27.9 30.0 - 56.6
68/01/27	1305 - 1730	144.9 - 305.1	259.7 - 297.4
68/01/28	0810 - 1800	117.2 - 114.0	61.4 - 144.4
68/01/29	0725 - 1400 1410 - 1740	240.7 - 119.5 125.6 - 252.5	258.9 - 315.0 310.4 - 13.9
68/01/30	0910 - 1820	94.9 - 67.4	115.7 - 154.6
68/01/31	0800 - 1015 1035 - 1155 1210 - 1745	203.2 - 264.5 297.0 - 345.3 354.4 - 197.0	311.3 - 330.4 333.3 - 15.5 -13.3 - 33.7
68/02/01	0840 - 1720	18.1 - 332.5	155.7 - 233.7
68/02/02	0800 - 1410 1435 - 1745	144.0 - 8.3 23.5 - 138.3	-1.5 - 50.4 53.5 - 80.6
68/02/03	0755 - 1545 1605 - 1730	292.3 - 246.5 228.6 - 280.0	200.7 - 267.7 270.6 - 282.7
68/02/04	0810 - 1700	92.1 - 52.5	46.8 - 121.2
68/02/05	0700 - 1100 1110 - 1700	200.4 - 345.5 351.6 - 203.2	240.5 - 274.7 276.1 - 325.8
68/02/06	0900 - 1700	63.7 - 353.9	100.7 - 168.5
68/02/07	0910 - 1020	220.4 - 262.7	306.5 - 316.5

TIME(UT) HHMM - HHMM	ACTIVITY CWL III	IO PHASE
1310 - 1440 1540 - 1735	206.5 - 261.0 297.2 - 6.8	212.8 - 225.7 234.2 - 250.6
1615 - 1755	109.1 - 169.5	82.6 - 56.6
0905 - 0945	150.5 - 174.7	69.1 - 74.7
0750 - 0815	230.7 - 245.8	247.7 - 251.2

DATE		TIME(UT)		OBSERVATIONS		22.2 KAUAI, HAWAII		TIME(UT)		ACTIVITY		IO PHASE	
YY/MM/DD		HHMM - HHMM		CML III		IO PHASE		HHMM - HHMM		CML III			
68/02/07		1040 - 1100		274.8 - 286.9		319.3 - 322.1							
		1110 - 1230		293.0 - 341.3		323.5 - 334.8							
		1245 - 1700		350.4 - 144.6		336.9 - 12.8							
68/02/08		0900 - 1100		5.1 - 77.6		147.8 - 164.8							
		1110 - 1210		23.7 - 119.9		168.2 - 174.8							
		1230 - 1240		126.0 - 138.1		176.2 - 179.0							
		1305 - 1715		153.2 - 304.4		182.6 - 218.2							
68/02/09		0900 - 1800		155.7 - 124.3		-7.7 - 68.1							
68/02/10		0845 - 1105		297.4 - 22.0		153.1 - 213.1							
		1125 - 1800		34.1 - 272.9		215.9 - 272.2							
68/02/11		0835 - 1800		82.0 - 63.6		35.7 - 115.1							
68/02/12		0845 - 1700		238.7 - 178.0		240.8 - 311.1		0845 - 0920		239.7 - 259.9		240.8 - 245.8	
68/02/13		0900 - 1700		38.5 - 328.7		86.1 - 153.8							
68/02/14		0830 - 1100		58.5 - 261.8		265.1 - 307.5							
		1110 - 1700		207.8 - 119.4		308.9 - -1.7							
68/02/15		0900 - 0950		339.9 - 10.1		133.2 - 140.3							
		1010 - 1130		22.2 - 70.6		143.1 - 154.4							
		1145 - 1425		75.6 - 176.4		156.5 - 179.3							
		1440 - 1700		165.5 - 270.1		181.4 - 201.3							
68/02/16		0500 - 0640		9.6 - 45.9		309.5 - 319.0							
		0900 - 1145		130.6 - 230.3		337.7 - 0.9							
		1215 - 1300		248.5 - 275.7		5.2 - 11.5							
		1445 - 1720		339.2 - 72.9		20.2 - 48.0							
68/02/20		0525 - 1400		28.4 - 154.7		75.1 - 113.8		1140 - 1235		110.0 - 143.3		54.0 - 101.8	
68/02/21		0845 - 1020		154.9 - 212.4		273.7 - 287.2							

DATE		TIME (LT)		OBSERVATIONS		22.2 KAUAI, HAWAII		TIME (UT)		ACTIVITY		IO PHASE	
YR/MM/DD		HHMM - HHMM		CML III		IO PHASE		HHMM - HHMM		CML III		IO PHASE	
68/02/21		1030 - 1220		218.4 - 284.9		268.6 - 304.2							
		1230 - 1300		291.0 - 309.1		305.6 - 309.8							
		1315 - 1355		318.2 - 342.3		311.9 - 317.6							
68/02/22		0600 - 1345		278.4 - 127.0		110.1 - 158.9							
68/02/23		0745 - 0940		60.0 - 129.5		312.5 - 328.8							
		1140 - 1345		202.1 - 277.7		-14.3 - 3.2							
68/02/24		0740 - 1005		207.0 - 295.3		154.5 - 175.1							
		1025 - 1050		307.4 - 322.5		178.0 - 181.5							
		1105 - 1340		331.6 - 65.3		183.7 - 205.8							
68/02/25		0735 - 0750		355.3 - 4.4		-1.8 - 0.3							
		0805 - 0850		13.4 - 40.6		2.4 - 8.7							
		0910 - 0925		52.7 - 61.8		11.5 - 13.6							
		0950 - 1100		76.3 - 119.2		17.2 - 27.0							
		1120 - 1245		131.3 - 182.7		29.8 - 41.7							
68/02/26		0730 - 0945		142.9 - 224.6		200.6 - 219.9		1005 - 1030		236.7 - 251.8		222.7 - 226.3	
		1000 - 1050		231.6 - 251.8		222.0 - 226.3							
		1040 - 1215		257.8 - 345.3		227.7 - 241.3		1135 - 1215		291.1 - 315.3		235.6 - 241.3	
68/02/27		1235 - 1310		327.3 - 0.6		244.1 - 252.0							
		0725 - 0920		290.6 - 0.1		43.7 - 59.8							
		1245 - 1305		124.1 - 136.2		88.6 - 51.4		1245 - 1305		124.1 - 136.2		88.6 - 91.4	
68/02/28		0740 - 0800		90.3 - 102.4		249.7 - 252.6							
		0810 - 1000		108.5 - 175.0		254.0 - 269.6							
		1015 - 1115		164.0 - 220.3		271.8 - 280.3							
		1230 - 1300		265.7 - 255.9		250.9 - 298.0							
68/02/29		0955 - 1020		342.6 - 337.7		111.7 - 115.2							
		1030 - 1310		343.8 - 86.6		116.6 - 140.7							

DATE YY/MM/LL	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	22.2 KAUAI, HAWAII		TIME(UT) HHMM - HHMM	ACTIVITY CML III	IO PHASE
			IC PHASE				
68/03/05	C645 - C730	123.6 - 150.8	117.3 - 123.7				
	0755 - C930	155.9 - 223.3	127.2 - 140.7				
	C945 - 1005	232.4 - 244.5	142.8 - 145.6				
	1045 - 1240	268.7 - 338.2	151.3 - 167.7				
68/03/10	C640 - C915	271.2 - 4.9	321.1 - 343.0				
	1110 - 1240	74.4 - 128.8	-0.9 - 11.7				
68/03/11	C635 - C745	58.8 - 101.1	163.2 - 173.2				
	C800 - C930	110.2 - 164.6	175.3 - 188.1				
	C945 - C555	173.7 - 176.7	190.3 - 191.7				
	1005 - 1045	185.8 - 209.9	193.1 - 198.8				
	1055 - 1140	216.0 - 243.2	200.3 - 206.7				
	C300 - C550	321.9 - 101.0	70.8 - 103.2				
68/03/16	C710 - C940	113.1 - 203.8	100.0 - 127.2				
	1025 - 1230	231.0 - 342.8	133.6 - 159.9				
	C300 - 1100	112.5 - 42.7	275.2 - 342.9				
68/03/17	1120 - 1430	54.8 - 165.7	345.7 - 12.4				
	C400 - C545	299.4 - 2.9	126.3 - 141.2				
68/03/18	C640 - 1000	36.2 - 157.1	149.0 - 177.5				
	1320 - 1420	278.0 - 314.3	206.0 - 214.5				
	C300 - 1005	53.7 - 310.7	322.3 - 22.0				
68/03/19	1110 - 1155	350.0 - 17.2	31.1 - 37.4				
	1210 - 1500	26.3 - 129.1	39.5 - 63.4				
	C740 - C820	13.6 - 37.8	205.1 - 210.8				
68/03/20	C640 - 1010	45.9 - 104.3	213.6 - 226.4				
	1110 - 1235	140.6 - 192.0	238.0 - 247.1				
	1305 - 1500	210.1 - 275.6	251.4 - 267.7				
				1320 - 1355	219.2 - 240.4	253.5 - 258.5	

DATE		TIME (LT)	OBSERVATIONS	22.2 KAUAI, HAWAII		TIME (UT)	ACTIVITY	IO PHASE	
YR/MO/CD		HHMM - HHMM	CML III	IC PHASE		HHMM - HHMM	CML III		
66/03/21		1100 - 1445	285.1 - 61.2	76.5 - 108.2					
68/03/22		C240 - C730	133.5 - 306.8	203.9 - 251.2		0555 - 0630	251.3 - 272.5	237.6 - 242.6	
		C755 - C820	323.9 - 339.0	254.7 - 259.3					
		C835 - C940	348.1 - 27.4	260.4 - 269.6					
		1110 - 1250	61.8 - 142.2	262.4 - 296.5					
68/03/23		C420 - C740	344.5 - 103.4	67.2 - 95.3					
		C845 - C950	144.7 - 184.0	104.5 - 113.7					
		1020 - 1210	202.1 - 266.6	117.9 - 133.5		1020 - 1040	202.1 - 214.2	117.9 - 120.8	
		1230 - 1300	280.7 - 290.9	136.3 - 140.6					
68/03/24		C310 - C950	92.8 - 322.5	261.6 - 315.3		0350 - 0435	116.9 - 144.2	267.3 - 273.6	
68/03/25		C435 - C700	294.7 - 22.4	116.3 - 135.8		0435 - 0505	294.7 - 312.9	116.3 - 120.5	
		C710 - C725	28.4 - 37.5	138.2 - 140.4					
		C740 - C855	46.6 - 91.9	142.5 - 153.2					
68/03/26		C320 - C405	40.0 - 67.2	310.2 - 316.5					
		C700 - C730	173.0 - 191.1	341.1 - 345.3					
68/03/29		C510 - C715	158.2 - 273.8	216.1 - 223.9		0630 - 0705	246.6 - 267.7	227.5 - 232.5	
		C810 - 1100	307.0 - 49.8	241.7 - 265.8		0900 - 0930	337.2 - 355.4	246.8 - 253.1	
		1135 - 1150	70.9 - 80.0	270.3 - 272.9					
		1200 - 1400	66.1 - 158.6	274.4 - 291.3					
68/03/30		C610 - 1025	25.0 - 179.2	67.6 - 103.5		0855 - 1000	124.8 - 164.1	50.8 - 100.0	
		1050 - 1320	194.3 - 251.0	107.1 - 126.7					
68/03/31		C900 - 1100	278.4 - 350.9	296.0 - 312.9					
		1110 - 1240	356.9 - 51.4	314.3 - 327.0					
		1255 - 1330	60.4 - 81.6	329.1 - 334.0					
68/04/01		C615 - C730	325.2 - 14.5	115.3 - 125.9					

22.2 KAUI, HAWAII		OBSERVATIONS		IO PHASE		TIME (UT)		ACTIVITY		IO PHASE	
DATE	TIME (LT)	CML III		CML III		HHMM - HHMM		CML III			
YYMM/LL	HHMM - HHMM										
68/04/01	C64C - 1000	96.9	- 105.2	133.8	- 147.2						
	1025 - 1045	140.3	- 132.4	150.8	- 153.6						
	1110 - 1200	147.3	- 177.7	157.2	- 164.3						
68/04/02	C61C - 0910	109.2	- 225.5	233.9	- 344.2						
68/04/03	C64E - 0605	252.1	- 244.2	159.3	- 161.2						
	C64C - 0715	255.4	- 300.5	166.1	- 171.1						
	C62E - 1005	348.8	- 49.3	181.1	- 195.3						
	1120 - 1215	34.6	- 127.9	200.0	- 213.9						
68/04/04	C61C - 0710	21.5	- 94.1	-2.7	- 14.1						
	C61C - 0840	130.3	- 140.5	22.6	- 26.8						
	C90C - 1000	160.6	- 196.8	29.5	- 38.0						
68/04/05	C330 - 0655	111.0	- 235.5	136.5	- 215.7	0610 - 0655		208.3 - 235.5		209.3 - 215.7	
68/04/06	1040 - 1300	223.7	- 330.3	344.7	- 1.3						
68/04/10	C025 - 0110	12.4	- 59.6	97.5	- 103.9						
	C41C - 0730	158.4	- 289.3	159.4	- 157.8						
	C75C - 0840	301.4	- 331.6	160.7	- 167.8						
	C91C - 0940	345.8	- 7.9	172.1	- 176.4						
	1030 - 1050	38.1	- 50.2	183.5	- 186.3						
68/04/11	C23C - 0700	238.5	- 61.7	219.6	- 2.5						
	C63E - 1050	115.1	- 200.7	10.8	- 29.7						
68/04/12	C40C - 0720	103.4	- 224.3	175.3	- 203.8	0415 - 0435		112.5 - 124.5		177.5 - 180.3	
68/04/13	C75C - 0900	242.4	- 284.7	208.1	- 218.1						
	C91E - 1100	293.8	- 337.3	220.2	- 235.1						
68/04/13	C15C - 0650	173.3	- 356.7	0.6	- 42.7						
	C51E - 1230	64.5	- 202.2	63.1	- 50.5						

DATE		TIME (LT)		OBSERVATIONS CML III	22.2 KAUAI, PARADISE		ACTIVITY CML III	TO PHAS
YY/MM/DD		HHMM	HHMM		IC PHASE	TIME (UT) HHMM - HHMM		
68/04/14	C11C	-	C715	301.6 - 162.3	196.5 - 250.4			
	C62E	-	1300	204.6 - 10.8	260.3 - 259.2			
68/04/15	C23C	-	C7C5	140.5 - 306.7	52.9 - 91.6			
	C74E	-	C940	330.5 - 40.4	97.3 - 113.5			
68/04/16	C40C	-	C710	345.4 - 100.3	269.9 - 296.7			
	C62E	-	C915	145.6 - 175.8	307.3 - 314.3			
	C92E	-	1005	181.9 - 206.0	315.7 - 321.3			
	1030	-	1110	221.2 - 255.5	324.9 - 330.1			
	C31E	-	C61E	108.7 - 290.0	106.1 - 148.7			
68/04/17	090E	-	102E	320.3 - 8.6	155.3 - 167.2			
	C22C	-	C540	225.9 - 131.9	302.7 - 4.5			
68/04/18	055C	-	1240	136.0 - 240.7	5.9 - 59.7			
	C230	-	C700	22.5 - 185.7	146.9 - 185.3			
68/04/19	C80C	-	C940	221.9 - 282.4	153.9 - 208.1			
	113E	-	1220	381.9 - 19.1	224.5 - 210.9			
68/04/21	C410	-	C500	23.9 - 54.1	238.5 - 215.6			
	C64E	-	C63E	117.6 - 164.1	250.5 - 246.1			
68/04/22	C230	-	C63E	113.9 - 225.7	37.3 - 63.3			
	0220	-	C700	258.3 - 67.6	240.1 - 279.7			
68/04/23	C61E	-	C950	112.9 - 170.3	250.3 - 303.6			
	C22E	-	C710	51.8 - 224.1	63.4 - 123.7			
68/04/24	C63C	-	C905	272.4 - 233.6	135.1 - 140.0			
	C330	-	C500	241.6 - 256.0	256.9 - 209.6			
68/04/25	C61E	-	C700	405.0 - 8.5	311.7 - 326.4			
	C61C	-	C65E	50.8 - 78.0	336.2 - 342.5			

22.2 KAUAI, HAWAII

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CWL III	IO PHASE	TIME(UT) HHMM - HHMM	ACTIVITY CWL III	IO PHASE
68/04/25	C915 - 1050	90.1 - 147.5	345.3 - -1.3			
68/04/26	C230 - C400	355.7 - 50.1	131.1 - 143.9			
	C430 - C910	68.3 - 237.5	148.2 - 186.1			
	1020 - 1130	279.9 - 322.2	158.0 - 208.0			
68/04/27	C320 - C925	176.4 - 37.1	342.1 - 33.3			
	C540 - 1200	46.1 - 130.8	35.4 - 55.1			
68/04/28	C020 - C420	218.1 - 75.7	159.9 - 211.1			
	C635 - 1200	84.7 - 281.2	213.3 - 259.4			
68/04/29	C230 - C620	87.1 - 226.1	21.6 - 53.9			
	C630 - C735	232.2 - 271.5	55.3 - 64.5			
	C800 - 1155	286.6 - 68.6	68.0 - 101.2			
68/04/30	C015 - C115	155.9 - 192.2	206.4 - 215.0			
	C230 - C720	237.5 - 52.8	225.6 - 266.7			
	C750 - C930	71.0 - 131.4	271.0 - 285.1			
68/05/01	C010 - C055	303.4 - 330.6	48.5 - 54.9			
	C230 - C720	28.0 - 203.3	68.3 - 105.3	0530 - 0605	136.8 - 157.9	93.7 - 98.6
	C800 - C825	227.5 - 242.6	114.9 - 118.5			
68/05/02	C230 - C720	178.4 - 353.7	272.6 - 313.4			
	1030 - 1200	108.6 - 163.0	340.1 - -7.3			
68/05/03	C230 - C720	328.9 - 144.2	115.2 - 156.4			
	C820 - C905	180.4 - 207.6	165.0 - 171.4			
	0920 - 1120	216.7 - 289.2	173.5 - 190.6			
68/05/04	C000 - 0140	28.6 - 89.1	298.2 - 312.3			
	C155 - C420	58.1 - 191.8	314.4 - 336.1			
	C440 - C715	197.9 - 291.6	337.5 - -0.8			

22.2 KAUAI, PANAI		OBSERVATIONS		TIME (UT)		ACTIVITY		IO PHASE	
DATE	TIME (UT)	CML III	IO PHASE	HHMM - HHMM	CML III	HHMM - HHMM	CML III	HHMM - HHMM	
68/05/04	0750 - 0815	342.7 - 347.8	4.1 - 7.6						
	0825 - 0925	333.9 - 10.1	9.1 - 17.5						
	1020 - 1100	43.4 - 57.6	25.2 - 30.8						
68/05/05	1110 - 1700	331.0 - 203.2	270.1 - 325.2						
	1700 - 1100	200.4 - 345.5	240.5 - 274.7						
68/05/06	0600 - 0110	325.5 - 11.8	344.2 - 5.4						
	0230 - 0710	00.1 - 229.4	5.8 - 45.1						
	0800 - 0900	259.8 - 295.9	52.1 - 60.5						
68/05/07	0230 - 0620	410.0 - 349.6	209.6 - 242.3						
	0640 - 0720	1.7 - 25.9	243.1 - 250.8						
	0735 - 0805	34.9 - 53.1	252.9 - 257.1						
68/05/08	0415 - 0540	64.4 - 115.8	67.1 - 79.1						
68/05/10	0735 - 0805	126.2 - 144.3	142.5 - 146.7						

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	CARNARVEN, AUSTRALIA		ACTIVITY CML III	ID PHASE
			IC PHASE	TIME(UT) HHMM - HHMM		
66/05/14	1900 - 2230	492.5 - 59.4	246.0 - 275.8			
66/05/15	1840 - 2250	70.8 - 221.9	87.0 - 122.0			
66/05/16	1835 - 2255	218.2 - 15.4	289.4 - 326.4			
66/05/17	1820 - 2315	150.0 - 328.3	334.3 - 16.0			
66/05/18	1800 - 2315	288.3 - 118.7	174.0 - 218.4			
66/05/19	1800 - 2300	78.7 - 260.1	18.2 - 60.4			
66/05/20	1750 - 2300	223.1 - 50.5	219.2 - 263.2			
66/05/21	1730 - 2245	1.5 - 191.9	80.5 - 104.6			
66/05/22	1720 - 2215	145.8 - 324.2	261.5 - 303.9			
66/05/23	1715 - 2210	253.2 - 147.8	104.7 - 154.4			
66/05/24	1710 - 2240	80.7 - 280.1	307.5 - 354.4	1710 - 2240	80.7 - 280.1	307.5 - 354.4
66/05/25	2025 - 2240	135.4 - 221.0	22.0 - 41.0			
66/05/26	2015 - 2230	283.8 - 5.4	223.0 - 242.2			
66/05/27	2030 - 2215	83.3 - 146.8	64.1 - 83.8			
66/05/28	2005 - 2220	218.6 - 300.2	266.6 - 287.8	2120 - 2135	264.0 - 273.0	279.3 - 281.4
66/05/29	1955 - 2215	3.0 - 87.7	110.5 - 130.1			
66/05/30	2005 - 2225	155.5 - 280.4	313.7 - 344.1			
66/05/31	1940 - 2225	254.9 - 34.6	154.3 - 175.0			
66/05/32	2015 - 2215	47.4 - 120.0	50.5 - 67.3			
66/05/33	2015 - 2220	157.9 - 273.4	253.4 - 271.2			

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	22.2 CARNARVEN, AUSTRALIA		ACTIVITY CML III	IO PHASE
			IC PHASE	TIME(UT) HHMM - HHMM		
66/10/02	1830 - 2215	166.8 - 302.8	175.0 - 206.9			
66/10/03	1830 - 2220	317.2 - 56.3	19.3 - 51.6			
66/10/12	1710 - 2155	183.3 - 355.6	38.3 - 78.2			
66/10/13	1710 - 2205	333.8 - 152.1	241.2 - 283.2			
66/10/14	2015 - 2200	236.1 - 255.6	110.6 - 125.4			
66/10/15	2005 - 2200	20.6 - 90.1	313.3 - 359.6			
66/10/16	2000 - 2200	168.1 - 240.6	155.1 - 172.0			
66/10/17	2000 - 2200	318.6 - 31.1	359.4 - 16.3			
66/10/18	1555 - 2300	106.1 - 217.9	201.3 - 227.6			
66/10/19	1550 - 2210	253.6 - 338.2	44.6 - 64.2			
66/10/20	1950 - 2230	44.1 - 140.8	247.7 - 270.5			
66/10/21	1945 - 2210	191.6 - 279.3	50.3 - 110.6			
66/10/22	1940 - 2205	335.1 - 66.8	293.5 - 314.1			
66/10/23	1940 - 2210	129.7 - 220.3	136.2 - 157.3			
66/10/24	1935 - 2300	277.2 - 41.1	339.8 - 8.7			
66/10/25	1915 - 2215	67.7 - 164.4	182.3 - 105.0			
66/10/26	1930 - 2300	215.2 - 342.2	25.8 - 55.2			
66/10/27	1925 - 2225	2.7 - 111.6	228.0 - 253.7			
66/10/28	1920 - 2200	150.3 - 277.2	70.8 - 100.3			
66/10/29	1915 - 2205	257.8 - 40.6	273.5 - 258.0			

DATE		TIME(UT)	OBSERVATIONS		CARNARVEN, AUSTRALIA		ACTIVITY		IO PHASE	
YY/MM/DD	HHMM - HHMM	TIME(UT)	CML III	IC PHASE	TIME(UT)	CML III	HHMM - HHMM	CML III	HHMM - HHMM	IO PHASE
66/10/30	1915 - 2155	88.3 - 165.1	116.7 - 139.2							
66/10/31	1910 - 2205	235.9 - 341.7	320.3 - 345.0							
66/11/01	1905 - 2400	23.4 - 201.8	162.1 - 203.9							
66/11/02	1900 - 2400	171.0 - 352.3	5.7 - 47.8							
66/11/03	1900 - 2225	321.5 - 65.5	208.5 - 237.7							
66/11/07	1845 - 2320	154.7 - 7.0	300.9 - 341.2		1935 - 2120	225.0 - 288.4	308.0 - 322.8			
66/11/08	1840 - 2215	342.3 - 112.3	142.7 - 173.1							
66/11/09	1835 - 2205	129.8 - 250.8	346.4 - 15.9							
66/11/10	1835 - 2205 2230 - 2300	280.4 - 47.4 62.5 - 80.6	189.1 - 219.0 222.5 - 226.8							
66/11/11	1830 - 2200	66.0 - 195.0	32.4 - 61.8							
66/11/12	1825 - 2205	215.6 - 348.6	235.0 - 266.3		1905 - 1950	239.7 - 267.0	240.7 - 247.1			
66/11/14	1840 - 2205	165.8 - 289.8	284.4 - 313.5		2100 - 2205	250.5 - 289.8	304.3 - 313.5			
66/11/15	1830 - 2155	310.4 - 74.3	125.7 - 154.6							
66/11/16	1840 - 2220	107.0 - 240.0	331.5 - 2.5							
66/11/17	1805 - 2205	236.5 - 21.6	165.2 - 203.3							
66/11/18	1805 - 2200 2220 - 2400	27.1 - 169.2 181.2 - 241.7	13.3 - 46.3 49.1 - 63.1							
66/11/19	1800 - 2200	174.7 - 319.8	215.6 - 250.0		1855 - 2105	207.9 - 286.5	223.6 - 242.1			
66/11/20	1755 - 2200	322.3 - 110.4	58.6 - 92.9							
66/11/21	1750 - 2225	105.8 - 276.1	261.7 - 300.8							

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS		CARNARVEN, AUSTRALIA		TIME(UT) HHMM - HHMM	ACTIVITY CML III	ID PHASE
		CML III		IC PHASE				
66/11/22	1815 - 2345	275.6	- 115.1	108.1	- 154.7			
66/11/23	1800 - 2330	57.1	- 256.6	310.4	- 356.9			
66/11/24	1740 - 2240	455.7	- 17.0	150.1	- 192.7			
66/11/25	1735 - 2210	443.3	- 145.5	353.8	- 32.3			
66/11/26	1950 - 2210	215.5	- 300.2	215.3	- 235.9	2040 - 2110	245.7 - 263.9	223.1 - 227.3
66/11/27	1725 - 2155	278.5	- 81.7	39.0	- 76.9			
66/11/28	1725 - 2205	65.1	- 238.4	242.7	- 282.6			
66/11/29	1825 - 2255	256.0	- 59.3	94.2	- 132.2			
66/11/30	1715 - 2300	4.4	- 212.9	268.7	- 337.4			
66/12/01	1710 - 2300	152.0	- 3.6	130.6	- 180.2	1950 - 2005	248.7 - 257.8	152.2 - 155.1
66/12/02	1710 - 2300	302.6	- 154.2	335.0	- 24.2			
66/12/03	1705 - 2300	90.2	- 304.9	177.1	- 227.7	2025 - 2135	211.2 - 253.5	205.6 - 215.6
66/12/04	1705 - 2300	240.9	- 95.5	21.1	- 70.9			
66/12/05	1655 - 2300	25.5	- 245.2	223.2	- 275.1			
66/12/06	1750 - 2310	209.4	- 42.9	74.1	- 119.2			
66/12/07	1840 - 1900	30.3	- 42.4	285.5	- 288.3			
	2125 - 2235	130.1	- 172.4	308.9	- 318.7			
66/12/08	1710 - 2200	126.5	- 301.9	115.4	- 156.5			
66/12/09	1700 - 2230	271.2	- 110.7	318.5	- 4.9			
66/12/11	1705 - 2230	215.5	- 52.0	6.1	- 51.7			
66/12/12	1700 - 2200	3.2	- 164.5	208.7	- 251.5			

DATE YY/MM/DD	TIME (LT) HHMM - HHMM	OBSERVATIONS CML III	22.2 CARNARVEN, AUSTRALIA		TIME (UT) HHMM - HHMM	ACTIVITY CML III	IO PHASE
			IO PHASE				
66/12/13	1950 - 2200 2210 - 2225	256.6 - 335.2 341.3 - 350.3	70.0 - 54.3 55.7 - 57.8				
66/12/14	1615 - 2215	277.3 - 135.0	249.8 - 300.9				
66/12/15	1615 - 1625 1652 - 2040 2055 - 2215	88.0 - 80.1 52.1 - 226.2 237.3 - 285.6	52.7 - 55.5 59.3 - 130.1 132.2 - 143.6	1900 - 1920	167.7 - 179.8	116.0 - 118.8	
66/12/16	1735 - 2210	267.0 - 73.3	308.5 - 347.2				
66/12/17	1615 - 2215	5.3 - 227.0	139.8 - 191.0				
66/12/18	1800 - 2200	223.5 - 8.6	358.9 - 32.6				
66/12/19	1600 - 2200	301.6 - 159.3	185.2 - 236.5				
66/12/20	1800 - 2100	164.8 - 273.7	45.7 - 71.0				
66/12/22	1600 - 1600 1640 - 2140	33.7 - 166.2 130.4 - 239.2	75.7 - 52.6 59.3 - 123.7				
66/12/23	1640 - 2140	206.5 - 29.9	265.8 - 328.2				
66/12/24	1535 - 1805 1625 - 2135	319.9 - 50.6 62.7 - 177.6	119.3 - 140.6 143.4 - 170.4				
66/12/25	1525 - 1820 1640 - 2125	104.5 - 210.4 222.5 - 322.2	322.4 - 347.0 349.8 - 13.0				
66/12/26	1525 - 2125	255.2 - 112.9	165.3 - 216.6				
66/12/27	1520 - 2120	42.9 - 260.6	8.6 - 59.1				
66/12/28	1515 - 1810 1825 - 2115	190.6 - 290.4 305.5 - 48.2	211.5 - 236.4 239.5 - 262.7				
66/12/29	1710 - 2110	50.8 - 195.9	70.9 - 104.7	1825 - 2005	96.1 - 156.6	21.4 - 95.5	

DATE		TIME(UT)		OBSERVATIONS		22.2 CARNARVCA, AUSTRALIA		ACTIVITY		IO PHASE	
YR/MN/CD		HHMM	HHMM	CML III		IO PHASE	TIME(UT)	CML III		IO PHASE	
66/12/30	1510 - 2110	128.9 - 346.6	258.3 - 309.3								
66/12/31	1525 - 2100	288.7 - 131.3	103.2 - 150.7								
67/01/01	1725 - 2100	151.9 - 281.9	324.6 - 354.8								
67/01/02	1550 - 2050	245.2 - 66.6	154.1 - 196.8								
67/01/03	1700 - 2050	78.2 - 217.3	8.0 - 40.2								
67/01/04	1640 - 1715	216.8 - 236.0	268.8 - 213.8				1640 - 1700	216.8 - 228.9	208.8 - 211.7		
	1740 - 2045	253.1 - 5.0	217.4 - 243.7				1850 - 1915	295.4 - 310.5	227.3 - 230.9		
67/01/05	1550 - 1720	337.3 - 37.7	45.0 - 59.1				1950 - 2010	331.7 - 343.8	235.9 - 238.7		
	1740 - 2100	43.8 - 164.7	60.5 - 88.6				2010 - 2100	134.5 - 164.7	81.6 - 88.6		
67/01/06	1630 - 2035	152.2 - 300.3	255.0 - 259.7								
67/01/07	1630 - 1720	342.9 - 333.1	57.7 - 104.8								
	1605 - 2030	36.6 - 88.0	119.6 - 131.7								
67/01/08	1450 - 1515	33.1 - 48.2	288.1 - 291.7								
67/02/30	2125 - 2210	189.9 - 253.3	58.6 - 73.5								
67/02/31	2125 - 2250	340.2 - 31.6	261.0 - 273.0								
67/05/01	2125 - 2245	130.5 - 178.9	105.2 - 116.5								
67/05/02	2120 - 2400	277.9 - 14.6	307.0 - 329.7								
67/05/03	2115 - 2245	65.2 - 115.6	50.1 - 162.7								
67/05/04	2110 - 2255	212.6 - 276.0	352.5 - 7.4								
	2325 - 2400	294.2 - 315.3	11.7 - 16.5								
67/05/05	2110 - 2300	2.9 - 63.4	195.6 - 211.0								

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS		CARNARVON, AUSTRALIA		TIME(UT) HHMM - HHMM	ACTIVITY CML III	IO PHASE
		CML III	IO PHASE	CML III	IO PHASE			
67/09/06	2120 - 2240	155.3 - 207.7	40.3 - 52.2			2150 - 2215	327.8 - 342.9	247.5 - 251.0
67/09/07	2120 - 2235	309.7 - 355.0	243.3 - 253.9			2200 - 2230	124.2 - 142.4	93.1 - 97.4
67/09/08	2110 - 2220	94.0 - 142.4	86.1 - 97.4			2230 - 2315	83.1 - 110.3	143.7 - 150.0
67/09/09	2110 - 2255	244.4 - 307.8	288.5 - 303.4					
67/09/10	2100 - 2215	28.7 - 110.3	131.1 - 150.0					
67/09/12	2050 - 2245	323.4 - 32.9	175.9 - 192.0					
67/09/27	2020 - 2215	41.0 - 110.5	341.2 - 2.4					
67/09/28	1955 - 2220	176.3 - 270.0	180.7 - 202.4					
67/09/29	1950 - 2220	323.7 - 60.4	23.9 - 46.6					
67/09/30	1945 - 2250	111.1 - 204.7	225.7 - 247.5					
67/10/01	1935 - 2250	255.4 - 13.3	68.5 - 55.9					
67/10/02	1935 - 2225	45.8 - 148.6	270.9 - 295.1					
67/10/03	1930 - 2045	153.2 - 238.5	114.2 - 124.7					
67/10/04	1920 - 2200	337.6 - 74.3	315.7 - 338.5					
67/10/05	1930 - 2120	134.0 - 206.6	160.5 - 177.3					
	2150 - 2210	218.7 - 230.7	180.1 - 182.9					
67/10/06	1925 - 2150	281.4 - 9.1	3.5 - 24.1					
67/10/07	1920 - 2210	62.8 - 171.6	205.4 - 229.3					
67/10/08	1920 - 2200	215.2 - 315.9	49.6 - 72.2					
67/10/09	1915 - 2300	6.6 - 142.6	221.3 - 283.2					
67/10/10	1930 - 2155	166.1 - 253.8	57.5 - 117.8			2000 - 2020	184.3 - 196.3	101.7 - 104.5

DATE		TIME (LT)		OBSERVATIONS		22.2 CARNARVON, AUSTRALIA		TIME (UT)		ACTIVITY		IO PHASE	
YY/MM/DD		HHMM - HHMM		CML III		IC PHASE		HHMM - HHMM		CML III			
67/10/11	1525 - 2240	343.5 - 71.4	293.6 - 327.4										
67/10/12	1525 - 2200	104.0 - 197.6	143.1 - 164.8										
67/10/13	1920 - 2215	251.4 - 357.1	345.9 - 10.8										
67/10/14	1915 - 2345	38.5 - 202.0	188.0 - 226.0										
67/10/15	1910 - 2235	186.2 - 310.1	31.4 - 60.4										
67/10/16	1900 - 2225	330.6 - 112.6	232.4 - 265.7										
67/10/17	1930 - 2145	135.1 - 220.8	60.5 - 55.8					2000 - 2040	157.3 - 181.5	85.1 - 90.7			
67/10/18	1850 - 2205	265.4 - 23.3	277.9 - 305.6										
67/10/19	1845 - 2240	52.8 - 154.9	120.9 - 153.8										
67/10/20	1840 - 2240	206.3 - 345.3	323.5 - -2.3										
67/10/21	1835 - 2240	347.7 - 135.8	165.8 - 200.2										
67/10/22	1830 - 2235	135.1 - 283.2	9.1 - 43.8										
67/10/23	1820 - 2210	275.5 - 58.5	210.2 - 242.7										
	2220 - 2245	64.6 - 79.7	144.1 - 247.6										
	2255 - 2400	85.7 - 125.0	249.0 - 258.3										
67/10/25	1820 - 2310	220.4 - 35.7	257.0 - 258.2										
67/11/01	1815 - 2235	190.7 - 347.8	239.7 - 276.6					1915 - 2005	226.9 - 257.2	248.2 - 255.3			
67/11/03	1820 - 2350	134.7 - 334.1	287.5 - 324.4										
67/11/04	1810 - 2245	275.1 - 65.3	129.5 - 168.0										
67/11/05	1810 - 2350	65.6 - 275.1	333.2 - 21.4										
67/11/06	1800 - 2245	214.0 - 26.3	174.5 - 214.6										

DATE		TIME(UT)		OBSERVATIONS		CARNARVEN, AUSTRALIA		TIME(UT)		ACTIVITY		ID PHASE	
YY/MM/DD		HHMM - HHMM		CML III		ID PHASE		HHMM - HHMM		CML III		ID PHASE	
67/11/08		1705 - 1920 2000 - 2300		121.8 - 209.4 227.5 - 336.4		213.4 - 233.9 238.2 - 263.7		2000 - 2055		227.5 - 260.8		238.2 - 246.0	
67/11/09		1705 - 2240		272.3 - 114.8		57.6 - 104.6							
67/11/10		1635 - 2400		44.6 - 313.6		258.1 - 319.4							
67/11/11		1635 - 2400		155.1 - 104.1		59.9 - 162.3							
67/11/12		1625 - 2235		335.6 - 203.2		301.8 - -5.6							
67/11/13		1640 - 2300		139.2 - 8.9		147.0 - 200.5							
67/11/14		1620 - 2245		277.6 - 150.3		-1.8 - 42.7							
67/11/15		1800 - 1935 1950 - 2205		128.5 - 186.0 155.0 - 276.6		204.9 - 216.3 220.4 - 239.6		2035 - 2140		222.2 - 261.5		226.8 - 236.0	
67/11/16		1640 - 1720 1730 - 2245		230.7 - 254.9 260.9 - 91.3		37.9 - 43.5 44.9 - 59.2							
67/11/17		1700 - 2300		33.3 - 250.9		241.3 - 294.6							
67/11/18		1700 - 2220		183.8 - 17.3		67.3 - 132.1							
67/11/19		1700 - 2230		334.3 - 173.8		250.5 - 337.5		2135 - 2210		140.6 - 161.7		329.7 - 334.6	
67/11/20		1850 - 2245		191.4 - 333.4		149.1 - 182.2							
67/11/21		1725 - 2220		290.5 - 108.8		-16.9 - 23.0							
67/11/22		1735 - 2210		87.1 - 253.3		185.2 - 224.1							
67/11/23		1800 - 2210		252.7 - 43.9		33.1 - 68.2							
67/11/25		1810 - 2150		155.9 - 332.9		81.1 - 111.9							
67/11/26		1810 - 2100		350.4 - 93.2		284.3 - 306.5							

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS		CARNARVON, AUSTRALIA		ACTIVITY CML III	IO PHASE
		CML III	IO PHASE	TIME(UT) HHMM - HHMM	IO PHASE		
67/11/27	1740 - 2150	125.8 - 273.9	123.3 - 158.4				
67/11/28	1600 - 2330	255.4 - 68.7	330.1 - 8.4				
67/11/29	1730 - 2120 2150 - 2300	57.9 - 190.9 215.0 - 257.4	168.5 - 201.0 205.2 - 215.1				
67/11/30	1800 - 2400	226.6 - 84.2	17.1 - 67.7				
67/12/01	1550 - 2345	83.6 - 225.7	235.3 - 268.7				
67/12/02	1700 - 2400	131.4 - 25.3	55.4 - 114.2				
67/12/03	1915 - 2350	3.6 - 169.8	277.6 - 316.7				
67/12/04	1650 - 2400	66.5 - 320.4	100.5 - 160.8				
67/12/06	1745 - 2125 2150 - 2350	40.9 - 173.9 185.0 - 261.5	154.8 - 185.8 189.3 - 206.3				
67/12/07	1615 - 2300	137.0 - 21.9	-13.6 - 43.5				
67/12/08	1700 - 24)	314.8 - 208.7	195.3 - 255.0				
67/12/09	1620 - 2400	81.2 - 355.3	34.0 - 98.5				
67/12/10	1615 - 2350	226.8 - 143.9	236.1 - 300.9			1640 - 1720 243.9 - 268.1	239.6 - 245.3
67/12/12	1605 - 1705 1715 - 1750 1800 - 2340	163.9 - 200.2 206.2 - 227.4 233.4 - 75.0	282.0 - 290.5 252.0 - 296.9 258.4 - -13.4				
67/12/13	1600 - 1635 1650 - 2240	311.5 - 332.6 341.7 - 193.3	124.4 - 129.3 131.4 - 180.7				
67/12/14	1550 - 1645 1655 - 2000	56.0 - 129.3 135.3 - 247.2	327.1 - 334.9 330.3 - 2.5			2240 - 2340 42.7 - 79.0	338.1 - -13.4

DATE		TIME(LT)	OBSERVATIONS		22.2	CARNARVEN, AUSTRALIA		TIME(UT)	ACTIVITY	IO PHASE
YY/MM/DD		HHMM - HHMM	CML III			IO PHASE		HHMM - HHMM	CML III	
67/12/14		2010 - 2400	253.2 - 32.3			3.9 - 36.3				
67/12/15		2130 - 2400	92.2 - 182.9			217.9 - 239.2				
67/12/16		1750 - 2225 2305 - 2400	105.8 - 276.0 300.2 - 333.5			31.0 - 69.6 75.2 - 83.0				
67/12/17		2105 - 2345	18.3 - 115.0			261.7 - 284.5				
67/12/18		1530 - 1815 1900 - 2305	326.3 - 00.1 93.3 - 241.4			58.1 - 81.2 87.5 - 121.8		2005 - 2020	132.6 - 141.7	96.6 - 98.7
67/12/19		1600 - 1715 1725 - 2345	135.1 - 180.4 186.5 - 56.2			265.6 - 276.3 277.7 - 331.7				
67/12/20		1520 - 1635 1710 - 2400	261.5 - 306.9 328.0 - 215.9			103.3 - 113.8 118.7 - 176.4				
67/12/21		1700 - 2230	112.6 - 312.1			321.5 - 8.2				
67/12/26		2045 - 2400	281.7 - 39.6			290.7 - 316.4				
67/12/27		1735 - 2400	317.5 - 190.3			106.9 - 161.0		2335 - 2400	175.2 - 190.3	157.5 - 161.0
67/12/28		1535 - 1715 1725 - 2250	45.6 - 96.0 102.1 - 258.6			293.9 - 308.2 309.6 - 4.4				
67/12/29		1530 - 1640 1650 - 2400	143.2 - 225.5 231.6 - 131.5			136.1 - 145.9 147.3 - 208.2				
67/12/30		1540 - 2335	335.9 - 267.1			-18.1 - 48.6				
67/12/31		1600 - 2400	142.6 - 72.8			187.3 - 255.6				
68/01/01		1500 - 2400	257.0 - 223.5			23.2 - 59.0				
68/01/02		1525 - 2400	62.7 - 14.1			229.7 - 303.1				

DATE		TIME(UT)		OBSERVATIONS		CARNARVEN, AUSTRALIA		ACTIVITY		IO PHASE	
YY/MM/DD		HHMM - HHMM		CML III		IO PHASE		CML III		IO PHASE	
68/01/03	1430 - 2205	180.1 - 95.2	65.7 - 129.6								
68/01/04	1420 - 2355	324.7 - 312.4	268.0 - -10.4								
68/01/05	1505 - 2400	142.6 - 106.1	117.4 - 193.0								
68/01/06	1450 - 2400	284.2 - 256.7	319.6 - 37.2								
68/01/07	1600 - 2330	117.2 - 29.3	172.2 - 236.1								
68/01/08	1410 - 2300	201.3 - 161.8	1.1 - 75.5								
68/01/09	1430 - 2310	76.6 - 318.5	223.8 - 280.8								
68/01/10	1700 - 2320	245.4 - 115.2	71.8 - 125.1					1700 - 1725 245.4 - 260.6 71.8 - 75.3 1825 - 1520 256.8 - 330.1 83.7 - 91.4			
68/01/12	1430 - 2400	96.1 - 80.7	57.5 - 177.9								
68/01/13	1500 - 2340	264.9 - 219.3	305.9 - 19.4								
68/01/14	1630 - 2.00	110.0 - 22.1	161.4 - 225.3								
68/01/15	1520 - 1700 1730 - 1815 1900 - 2400	218.3 - 278.8 256.9 - 324.1 351.3 - 172.7	-4.0 - 10.0 14.3 - 40.6 26.9 - 69.0								
68/01/16	1425 - 1455 1720 - 2300	335.7 - 353.9 61.6 - 287.1	150.9 - 155.2 215.8 - 264.3					2110 - 2215 220.6 - 259.9 248.6 - 257.9			
68/01/17	1600 - 2310	183.9 - 83.9	48.5 - 108.8								
68/01/18	1600 - 1700 1715 - 1735 1800 - 2350	334.5 - 10.8 15.9 - 32.0 47.1 - 256.7	252.0 - 260.5 252.7 - 265.5 269.1 - 318.8								
68/01/19	1600 - 1710 1720 - 1755	125.2 - 167.5 173.6 - 194.8	55.2 - 105.1 100.5 - 111.4					1605 - 1635 128.2 - 146.4 55.9 - 100.2			

DATE		TIME(UT)		OBSERVATIONS		CARNARVEN, AUSTRALIA		ACTIVITY		ID PHASE	
YY/MM/DD		HHMM - HHMM		CML III		IC PHASE		CML III		ID PHASE	
68/01/19		1815 - 2250		206.8 - 13.1		114.2 - 153.0		1815 - 1825		206.9 - 212.9	
68/01/20		1500 - 2400		239.6 - 206.1		231.0 - 7.3				114.2 - 115.6	
68/01/21		1330 - 1455		335.9 - 27.3		121.1 - 133.0					
		1510 - 1610		36.4 - 72.6		135.2 - 143.6					
		1625 - 1705		81.7 - 105.9		145.7 - 151.4					
		1720 - 2350		115.0 - 350.8		153.3 - 208.9					
68/01/22		1500 - 1705		181.0 - 256.6		338.3 - -4.1					
		1720 - 1740		265.6 - 277.7		-2.0 - 0.8					
		1750 - 1840		283.8 - 314.0		2.2 - 9.3					
		1855 - 2300		323.1 - 111.2		11.4 - 45.8					
68/01/23		1700 - 2245		44.2 - 252.8		158.1 - 247.2		2130 - 2245		207.5 - 252.8	
68/01/24		1605 - 1735		161.7 - 216.1		34.4 - 47.0				236.5 - 247.2	
		1745 - 2400		222.1 - 68.9		48.4 - 101.0					
68/01/25		1525 - 2330		268.2 - 221.4		232.1 - 301.1		1545 - 1710		300.3 - 351.7	
68/01/26		1620 - 1905		112.1 - 211.9		83.3 - 106.5		1655 - 1845		133.3 - 159.8	
		2000 - 2200		245.1 - 354.0		114.2 - 139.6				88.2 - 103.7	
68/01/27		1510 - 1740		220.5 - 311.2		277.5 - 298.9					
		1755 - 2325		320.2 - 159.8		301.0 - -12.3					
68/01/28		1410 - 2250		334.9 - 289.3		111.9 - 185.5					
68/01/29		1525 - 2320		170.9 - 98.1		327.0 - 33.9					
68/01/30		1625 - 1700		357.9 - 19.1		178.3 - 183.2					
		1740 - 2420		43.2 - 212.5		188.9 - 248.8					
68/01/31		1525 - 2300		112.3 - 27.4		14.1 - 77.9					
68/02/01		1750 - 2250		350.7 - 172.1		237.9 - 280.7					

DATE		TIME(UT)		OBSERVATIONS		CARNARVN, AUSTRALIA		ACTIVITY		IO PHASE	
YY/MM/CD		HHMM - HHMM		CML III		IC PHASE		CML III		HHMM - HHMM	
68/02/02		1505 - 1510		41.6 - 68.8		58.1 - 64.5				1800 - 1830	82.7 - 86.9
		1610 - 1615		80.9 - 337.9		67.3 - 127.0					
68/02/03		1300 - 2255		116.7 - 116.5		244.2 - 328.7					
68/02/04		1415 - 1710		312.7 - 58.6		58.0 - 122.6					
		1840 - 2300		113.0 - 270.2		135.3 - 172.2					
68/02/05		1325 - 1505		73.2 - 133.7		295.3 - 309.5					
		1520 - 1710		142.7 - 209.3		311.6 - 327.2					
		1740 - 2300		227.4 - 60.9		331.4 - 16.5					
68/02/06		1620 - 1705		325.7 - 356.9		162.8 - 169.2					
		1725 - 2250		9.0 - 205.5		172.0 - 218.3					
68/02/07		1600 - 2245		108.3 - 353.2		4.4 - 61.2					
68/02/08		1410 - 1715		265.1 - 304.4		208.9 - 218.2					
		1800 - 2230		331.6 - 134.8		224.6 - 263.1					
68/02/09		1340 - 1400		325.0 - 337.1		31.6 - 34.5					
		1515 - 1640		22.5 - 37.6		45.0 - 48.5					
		1600 - 1645		49.7 - 76.9		51.3 - 57.6					
		1800 - 2235		122.3 - 288.5		68.1 - 106.7					
68/02/10		1405 - 1530		130.9 - 182.2		238.7 - 250.9					
		1745 - 2225		263.9 - 73.2		270.1 - 309.8					
68/02/11		1200 - 1700		206.0 - 27.4		64.5 - 106.6					
		1710 - 2210		33.4 - 220.8		108.0 - 151.8					
68/02/12		1210 - 1655		2.7 - 175.0		270.0 - 310.4					
		1705 - 2215		181.1 - 8.5		311.8 - -4.4					
68/02/13		1315 - 2210		192.7 - 156.2		122.0 - 197.9					

22.2		OBSERVATIONS		CARNAFVCN, AUSTRALIA		ACTIVITY	
DATE	TIME(UT)	CML III	IC PHASE	TIME(UT)	CML III	IO PHASE	
YY/MM/DD	HHMM - HHMM			HHMM - HHMM			
68/02/16	1605 - 1700	27.5 - 60.8	37.4 - 45.2	1935 - 2010	154.5 - 175.7	66.9 - 71.8	
	1735 - 1750	62.0 - 51.0	50.1 - 55.2				
	1805 - 2200	100.1 - 242.2	54.3 - 67.3				
68/02/17	1720 - 2225	223.6 - 48.0	251.8 - 295.2	1725 - 1755	226.6 - 244.7	252.5 - 256.8	
68/02/18	1235 - 1300	201.9 - 217.1	54.8 - 58.3				
	1315 - 1330	226.1 - 235.2	60.5 - 62.6				
	1345 - 1500	244.3 - 289.6	64.7 - 75.2				
	1540 - 1640	313.8 - 350.1	80.8 - 89.2				
	1655 - 2225	355.1 - 198.7	94.3 - 127.9				
68/02/19	1600 - 2300	116.6 - 10.5	288.0 - -12.7				
68/02/20	1625 - 1730	262.4 - 321.7	134.2 - 143.4				
	1755 - 1945	336.8 - 49.3	147.0 - 164.0				
	2015 - 2125	61.4 - 103.8	166.8 - 176.8				
	2200 - 2300	124.9 - 161.2	181.8 - 190.3				
68/02/21	1400 - 2210	345.4 - 281.6	318.3 - 27.2				
68/02/22	1125 - 1240	42.3 - 87.7	139.1 - 149.7				
	1335 - 2200	120.9 - 66.3	157.5 - 259.4				
68/02/23	1335 - 1510	271.5 - 329.0	1.8 - 15.2				
	1655 - 2200	32.5 - 216.9	29.9 - 72.7				
68/02/24	1600 - 1710	150.0 - 192.3	225.7 - 235.7				
	1820 - 2155	234.6 - 4.6	245.7 - 276.3				
68/02/25	1605 - 1705	303.6 - 339.9	6.8 - 78.2				
	1735 - 2145	358.1 - 149.2	82.4 - 117.6				
68/02/26	1625 - 1700	106.4 - 127.6	276.9 - 281.8				
	1815 - 2145	172.9 - 299.9	292.5 - 322.2				

CAT YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS		CARNARVON, AUSTRALIA		ACTIVITY CML III	IO PHASE
		CML III	IC PHASE	TIME(UT) HHMM - HHMM			
68/02/27	1400 - 1445	169.4 - 156.6	59.1 - 105.5				
	1545 - 1725	232.9 - 293.4	113.9 - 128.1				
	1750 - 1840	308.5 - 338.7	131.6 - 138.7				
	1850 - 1905	344.7 - 353.8	140.1 - 142.2				
	1935 - 2200	12.0 - 99.6	140.5 - 167.1				
68/02/28	1740 - 2020	53.1 - 189.8	334.7 - 2.8				
68/02/29	1110 - 2010	7.9 - 334.4	122.3 - 159.0				
68/05/01	1320 - 1355	60.9 - 82.0	160.4 - 165.4				
	1405 - 1415	88.1 - 94.1	160.8 - 168.3				
	1625 - 1705	100.2 - 156.9	169.7 - 192.5				
68/05/15	1255 - 1550	351.6 - 97.4	124.6 - 149.5				
68/05/16	1315 - 1445	154.1 - 206.5	331.2 - 343.8				
68/05/17	1220 - 1540	271.2 - 32.1	160.8 - 195.3				
68/05/18	1310 - 1410	91.8 - 134.2	16.9 - 26.8	1325 - 1355	100.9 - 119.0	15.0 - 23.3	
68/05/19	1450 - 1525	302.7 - 323.8	235.2 - 240.1				
68/05/20	1340 - 1550	50.7 - 111.2	67.8 - 81.9				
68/05/21	1330 - 1515	195.1 - 258.5	270.7 - 285.4				
68/05/22	1240 - 1515	315.2 - 48.9	106.2 - 128.2				
68/05/23	1255 - 1320	114.7 - 129.8	312.2 - 315.7				
	1335 - 1345	138.9 - 144.9	317.8 - 319.2				
68/05/24	1330 - 1345	266.2 - 295.3	160.4 - 162.5				
68/05/25	1305 - 1400	61.5 - 54.7	-0.0 - 7.7	1305 - 1345	61.5 - 65.6	-0.0 - 5.6	
68/05/26	1220 - 1455	184.6 - 276.3	197.5 - 219.5				

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	22.2 CAFARVEN, AUSTRALIA		ACTIVITY CML III	ID PHASE
			IC PHASE	TIME(UT) HHMM - HHMM		
68/05/27	1210 - 1405	329.0 - 36.5	38.7 - 54.9			
	1420 - 1445	47.5 - 62.5	57.1 - 60.6			
68/05/28	1450 - 1355	143.5 - 124.8	248.7 - 257.8			
	1405 - 1415	168.8 - 207.0	259.2 - 263.5			

DATE		TIME(UT)		OBSERVATIONS		IC PHASE		TIME(UT)		ACTIVITY		IO PHASE	
YY/MM/DD		HHMM - HHMM		CML III				HHMM - HHMM		CML III			
65/11/11		C45C - 1050		100.3 - 318.0		157.5 - 248.7		0925 - 0545 0755 - 0915		266.6 - 278.7 212.2 - 260.5		236.7 - 239.5 223.9 - 235.2	
65/11/12		C44E - 1120		248.0 - 126.8		39.9 - 55.6		0545 - 0655 0700 - 0740 0955 - 1000 1020 - 1120		284.2 - 326.6 329.6 - 353.8 75.4 - 78.4 0.5 - 126.8		48.3 - 58.2 58.9 - 64.5 82.6 - 84.3 87.1 - 95.6	
65/11/13		C42C - 1050		23.5 - 259.3		240.7 - 295.8		0420 - 0450 1015 - 1050		23.5 - 41.7 238.2 - 259.3		240.7 - 245.0 290.9 - 295.8	
65/11/14		C40C - 1040		162.1 - 44.0		80.6 - 137.3		0400 - 0500 0615 - 0625 0635 - 0740 0750 - 0840		162.1 - 198.4 243.7 - 249.8 255.8 - 255.1 301.2 - 331.4		80.6 - 89.1 99.7 - 101.1 102.5 - 111.7 113.1 - 120.2	
65/11/15		C450 - 1035		343.0 - 191.6		252.1 - 240.6							
65/11/16		C43C - 1020		121.6 - 335.3		132.1 - 183.4		0725 - 0740 1005 - 1020		227.4 - 236.5 324.2 - 333.2		157.1 - 159.2 179.9 - 182.0	
65/11/17		C42E - 1025		265.3 - 126.9		335.3 - 26.0		0445 - 0620		281.4 - 338.8		338.3 - 351.6	
65/11/18		C42C - 1045		56.9 - 289.7		170.3 - 233.1		0745 - 0800 0820 - 0830 0910 - 0945 0950 - 1045		180.9 - 189.9 202.0 - 208.1 232.3 - 253.4 256.5 - 289.7		207.5 - 209.6 212.5 - 213.9 215.6 - 224.6 225.3 - 233.1	
65/11/19		C41E - 1015		204.0 - 62.3		20.9 - 71.5		0615 - 0625 0635 - 0750 0825 - 0840		277.1 - 283.2 289.2 - 334.6 355.7 - 4.8		37.7 - 39.1 40.6 - 51.1 56.0 - 58.1	
65/11/20		C40C - 0710		346.2 - 101.1		223.0 - 249.9		0400 - 0415 0525 - 0545		346.2 - 355.3 37.6 - 49.7		223.0 - 225.1 235.0 - 237.9	
65/11/21		C45C - 1010		161.5 - 209.9		264.1 - 275.4							
65/11/21		C40E - 1005		139.9 - 357.6		65.4 - 117.4		0445 - 0520 0750 - 0835		164.1 - 185.3 276.0 - 303.2		72.1 - 77.0 98.3 - 104.6	
65/11/22		C34E - 0735		278.5 - 345.0		268.2 - 283.7		0345 - 0405 0440 - 0530		278.5 - 290.6 311.8 - 342.0		268.2 - 271.0 275.9 - 283.0	
65/11/23		C40 - 1000		133.2 - 145.2		318.1 - 320.9							
65/11/23		C35E - 1000		75.2 - 255.9		112.3 - 164.3		0545 - 0555 0625 - 0635 0755 - 0945		141.8 - 147.8 165.9 - 172.0 220.4 - 286.9		127.9 - 129.4 133.6 - 135.1 146.5 - 162.1	

16.7 GCDARC SPACE FLIGHT CENTER									
DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS		IO PHASE	TIME(UT) HHMM - HHMM	ACTIVITY		IO PHASE	
		CML III	CML III			CML III	CML III		
65/11/24	C35E - C615	225.9 - 310.6	310.6 - 316.2	7.1	0410 - 0420	235.0 - 241.0	235.0 - 241.0	318.7 - 320.1	
	C64C - C655	325.7 - 63.6	339.7 - 7.1		0430 - 0530	247.1 - 263.4	247.1 - 263.4	321.5 - 329.9	
65/11/25	C350 - 1025	13.6 - 256.5	159.1 - 216.8		0655 - 0725	334.8 - 352.9	334.8 - 352.9	341.8 - 346.0	
					0745 - 0800	5.0 - 14.1	5.0 - 14.1	348.8 - 350.9	
					0815 - 0825	23.1 - 29.2	23.1 - 29.2	352.0 - 354.4	
					0835 - 0845	35.2 - 41.3	35.2 - 41.3	355.8 - 357.2	
65/11/26	C34E - C645	161.3 - 18.9	2.0 - 52.6		0615 - 0635	101.3 - 113.4	101.3 - 113.4	179.8 - 182.7	
					0645 - 0700	119.4 - 128.5	119.4 - 128.5	184.1 - 186.2	
					0725 - 0820	143.6 - 176.9	143.6 - 176.9	185.8 - 197.6	
					0935 - 1035	222.2 - 256.5	222.2 - 256.5	202.3 - 216.8	
65/11/27	C34C - C640	308.9 - 166.6	265.3 - 256.4		0535 - 0745	227.8 - 306.4	227.8 - 306.4	17.4 - 35.7	
					0810 - 0855	321.5 - 348.7	321.5 - 348.7	39.2 - 45.5	
65/11/28	C33E - C635	56.6 - 314.3	47.5 - 58.4		0430 - 0500	339.2 - 357.3	339.2 - 357.3	212.4 - 216.7	
					0645 - 0705	60.8 - 72.9	60.8 - 72.9	231.6 - 234.5	
					0510 - 0550	154.0 - 178.2	154.0 - 178.2	60.9 - 66.5	
					0655 - 0900	217.5 - 293.1	217.5 - 293.1	75.7 - 93.4	
65/11/29	C30C - C620	226.1 - 101.9	247.1 - 302.1		0915 - 0935	302.2 - 314.3	302.2 - 314.3	55.6 - 98.4	
					0300 - 0550	226.1 - 328.9	226.1 - 328.9	247.1 - 271.1	
65/11/30	C32E - C625	31.9 - 249.6	53.3 - 144.5		0605 - 0645	338.0 - 2.2	338.0 - 2.2	273.2 - 278.9	
					0515 - 0655	98.5 - 156.9	98.5 - 156.9	106.9 - 123.1	
65/12/01	C320 - C620	179.6 - 37.3	297.0 - 347.5		0535 - 0620	261.2 - 288.5	261.2 - 288.5	316.0 - 322.3	
					0620 - 0640	288.5 - 300.5	288.5 - 300.5	325.3 - 325.1	
65/12/02	C315 - C615	118.0 - 335.7	343.2 - 33.7		0650 - 0745	306.6 - 339.8	306.6 - 339.8	326.5 - 334.2	
					0315 - 0915	118.0 - 335.7	118.0 - 335.7	343.2 - 33.7	
65/12/04	C23C - C610	241.5 - 123.3	180.6 - 217.5		0230 - 0525	241.5 - 347.3	241.5 - 347.3	180.6 - 205.5	
					0420 - 0445	58.7 - 113.8	58.7 - 113.8	39.2 - 42.8	
65/12/05	C30E - C650	53.3 - 298.2	26.7 - 85.3		0825 - 0920	246.9 - 280.1	246.9 - 280.1	73.8 - 81.6	
					0300 - 0540	201.0 - 297.7	201.0 - 297.7	232.4 - 255.1	
65/12/07	C30C - C6E5	351.7 - 206.3	75.1 - 125.5		0730 - 0820	154.9 - 185.2	154.9 - 185.2	113.4 - 120.5	

16.7		GOUCCARD SPACE FLIGHT CENTER		ACTIVITY		IO PHASE
OBSERVATIONS		TIME(UT)		CML III		
DATE	TIME(LT)	IC PHASE		HHMM - HHMM		
VF/VF/CC	HHMM - HHMM					
65/12/08	C250 - C250	136.3 - 233.1	278.2 - 300.7	0335 - 0425 0645 - 0845	104.9 - 135.2 219.8 - 292.4	331.5 - 338.5 358.1 - 15.0
	C242 - C242	242.2 - 248.2	302.8 - 304.2			
	C210 - C210	257.3 - 293.5	314.8 - 314.8			
	C240 - C240	311.7 - 320.8	315.0 - 321.1			
	C240 - C240	71.7 - 292.4	323.8 - 15.0			
65/12/10	C235 - C235	219.3 - 319.1	166.6 - 150.1	0310 - 0435 0445 - 0510	240.5 - 291.9 298.0 - 313.1	171.4 - 183.7 185.2 - 108.7
	C230 - C230	7.0 - 224.7	9.2 - 59.9			
65/12/12	C230 - C230	157.7 - 15.4	213.5 - 264.5	0615 - 0720	84.4 - 123.7	88.1 - 57.3
	C225 - C225	305.4 - 163.0	55.6 - 106.6			
65/12/15	C220 - C220	93.0 - 310.7	259.4 - 310.1	0400 - 0445 0610 - 0740	153.5 - 180.7 232.1 - 286.5	273.5 - 279.9 291.8 - 304.5
	C215 - C215	240.7 - 58.4	101.5 - 152.8			
65/12/17	C210 - C210	28.4 - 246.0	305.0 - 355.5	0340 - 0345 0425 - 0455	255.8 - 295.1 319.3 - 337.4	105.0 - 114.3 120.0 - 124.3
	C205 - C205	176.0 - 33.7	147.7 - 199.0			
65/12/19	C200 - C200	323.7 - 181.4	350.5 - 41.1	0345 - 0555	158.4 - 164.4	335.2 - 336.6
	C155 - C200	111.3 - 332.0	193.9 - 245.7			
65/12/21	C150 - C200	255.0 - 159.0	36.1 - 56.9	0320 - 0430 0620 - 0705 0725 - 0900	313.4 - 355.7 62.2 - 89.5 101.6 - 159.0	48.7 - 58.6 74.2 - 80.6 82.4 - 96.9
	C145 - C215	46.7 - 256.6	239.9 - 297.7			
65/12/22	C145 - C215	46.7 - 256.6	239.9 - 297.7	0155 - 0305 0345 - C210 0645 - 0835	52.7 - 58.7 119.2 - 134.3 228.0 - 294.6	241.3 - 242.7 256.8 - 260.4 282.2 - 257.4
	C145 - C215	46.7 - 256.6	239.9 - 297.7			

DATE		TIME(UT)		OBSERVATIONS		16.7		GCDARD SPACE FLIGHT CENTER		ACTIVITY		TO PHASE	
YY/MM/DD		HHMM	HHMM	CML III	IC PHASE	HHMM	HHMM	TIME(UT)		CML III			
65/12/23		C140 - C745		194.3 - 55.0	81.9 - 133.8	0245 - 0535				233.6 - 336.4		91.1 - 115.3	
65/12/24		C135 - C740		342.0 - 202.6	265.6 - 336.8								
65/12/25		C135 - C735		132.6 - 350.3	128.7 - 180.0	0515 - 0555				265.6 - 289.8		160.1 - 165.8	
65/12/26		C130 - C730		280.3 - 137.9	331.8 - 22.3	0255 - 0330				331.7 - 352.8		343.7 - 348.6	
65/12/27		C125 - C310		57.9 - 131.4	174.9 - 189.9								
		C325 - C740		140.5 - 254.6	192.0 - 228.2								
65/12/28		C120 - C720		215.6 - 73.2	17.2 - 68.0								
65/12/29		C115 - C215		3.2 - 35.5	221.0 - 229.5								
		C325 - C715		81.6 - 220.9	239.4 - 271.8								
65/12/30		C105 - C120		147.8 - 156.9	62.3 - 64.4								
		C150 - C700		175.0 - 2.4	68.5 - 112.7								
65/12/31		C105 - C705		292.5 - 156.1	266.3 - 317.3								
66/01/01		C050 - C700		80.0 - 303.7	107.5 - 160.3								
66/01/02		C100 - C700		236.7 - 94.4	311.0 - 3.5								
66/01/03		C055 - C655		24.4 - 242.0	155.9 - 207.1								
66/01/04		C050 - C650		172.0 - 25.6	358.4 - 45.1								
66/01/05		C045 - C645		319.6 - 177.3	202.0 - 252.9								
66/01/06		C040 - C640		107.2 - 222.1	44.0 - 70.9								
		C400 - C430		228.1 - 246.3	72.3 - 76.6								

16.7 GODDARD SPACE FLIGHT CENTER									
DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III		IO PHASE	TIME(UT) HHMM - HHMM		ACTIVITY CML III		IO PHASE
66/01/06	0455 - 0640	261.4	- 324.9	80.1 - 55.0	0545 - 0620		291.6 - 312.8		87.2 - 92.2
66/01/07	0020 - 0635	245.8	- 112.5	245.7 - 298.5	0020 - 0115 0140 - 0215		245.8 - 279.0 294.1 - 315.3		245.7 - 253.5 257.0 - 261.9
66/01/08	0030 - 0050 0115 - 0640	42.4 - 54.5 55.6 - 266.1		89.9 - 52.7 56.3 - 142.6	0315 - 0425 0525 - 0640		142.2 - 154.5 220.8 - 266.1		112.4 - 123.3 131.9 - 142.6
66/01/09	0025 - 0625	190.0	- 47.7	293.4 - 343.9	0130 - 0455		229.3 - 353.3		302.5 - 331.2
66/01/10	0025 - 0625	340.7	- 198.3	136.7 - 188.0	0335 - 0515		95.5 - 156.0		163.8 - 178.0
66/01/11	0020 - 0620	126.2	- 345.9	339.5 - 30.1	0110 - 0155 0310 - 0445		158.5 - 185.7 231.0 - 288.5		346.5 - 352.8 3.3 - 16.7
66/01/12	0015 - 0615	275.8	- 133.5	182.8 - 233.9	0115 - 0130		312.1 - 321.2		191.4 - 193.5
66/01/13	0010 - 0610	63.4	- 281.1	25.0 - 75.9	0145 - 0210 0220 - 0235 0510 - 0605		120.9 - 136.0 142.0 - 151.1 244.8 - 278.1		38.3 - 41.9 43.3 - 45.4 67.4 - 75.2
66/01/15	0000 - 0600	358.6	- 216.2	70.7 - 121.9	0240 - 0300 0520 - 0555		95.3 - 107.4 192.1 - 213.2		93.4 - 96.3 116.2 - 121.2
66/01/16	0000 - 0600 2350 - 2400	149.2 - 6.8 293.7 - 299.8		275.0 - 325.5 116.7 - 118.2	0445 - 0520		321.5 - 342.7		315.0 - 319.9
66/01/17	0020 - 0550 2345 - 0035	311.9 - 151.4 81.3 - 321.0		121.0 - 168.0 319.7 - 123.1	0030 - 0040 0105 - 0120		317.9 - 324.0 339.1 - 348.2		122.4 - 123.9 127.4 - 129.6
66/01/18	0110 - 0550 2345 - 2400	132.7 - 302.0 231.9 - 241.0		331.6 - 11.0 162.6 - 165.7	0200 - 0230 0320 - 0425		162.9 - 181.1 211.3 - 250.6		338.6 - 342.9 345.9 - 359.0
66/01/19	0005 - 0550 2340 - 0540	244.0 - 92.6 19.5 - 86.5		166.4 - 215.4 5.8 - 214.0	0020 - 0050 0100 - 0145 0235 - 0305		253.1 - 271.2 277.2 - 304.5 334.7 - 352.8		168.5 - 172.8 174.2 - 180.6 187.7 - 192.0
66/01/21	0020 - 0455	194.2	- 0.5	215.9 - 254.7	0110 - 0130 0140 - 0300 0320 - 0350		284.5 - 236.5 242.6 - 291.0 303.0 - 321.2		222.9 - 225.8 227.2 - 236.5 241.3 - 245.5

DATE		TIME(UT)		OBSERVATIONS		GODDARD SPACE FLIGHT CENTER		ACTIVITY		IO PHASE	
YY/MM/DD		HHMM	HHMM	CML III	IC PHASE	TIME(UT)	HHMM - HHMM	CML III			
66/01/21		0515 - 0535		12.6 - 24.7	257.5 - 260.3						
66/01/22		0135 - 0350		30.1 - 111.8	65.1 - 88.3	0250 - 0350		75.5 - 111.8		75.8 - 88.3	
		0400 - 0530		117.8 - 172.2	85.7 - 102.5	0400 - 0450		117.8 - 148.0		89.7 - 96.8	
		2335 - 0535		108.2 - 175.2	256.5 - 103.3						
66/01/23		2320 - 0520		249.7 - 316.7	57.3 - 305.0						
66/01/25		0000 - 0515		64.4 - 254.8	308.8 - 351.0						
66/01/26		0120 - 0510		263.3 - 42.4	161.9 - 194.6	0213 - 0235 0315 - 0325		295.4 - 308.7 332.9 - 338.9		169.4 - 172.6 176.3 - 179.7	
		2320 - 0515		341.3 - 45.4	347.9 - 195.3						
66/01/27		2320 - 0510		131.9 - 192.9	192.2 - 37.2						
66/01/28		2340 - 0600		254.5 - 13.7	37.7 - 248.7						
66/01/29		2330 - 2400		75.0 - 97.2	240.7 - 244.9						
66/01/30		2300 - 0500		211.4 - 278.5	75.2 - 287.1						
66/02/01		0005 - 0455		41.3 - 216.6	252.4 - 333.0	0340 - 0345		171.2 - 174.3		322.5 - 323.2	
66/02/07		2225 - 0420		314.4 - 18.5	263.0 - 109.3						
66/02/08		2300 - 2400		126.1 - 162.3	111.1 - 119.6						
66/02/09		0025 - 0420		177.5 - 319.5	123.2 - 156.6						
		2230 - 0140		256.4 - 222.8	310.3 - 133.9						
66/02/10		0155 - 0415		22.4 - 107.0	339.1 - 358.7						
66/02/11		0020 - 0410		115.4 - 254.5	169.8 - 202.4						
		2330 - 2400		235.7 - 253.8	5.4 - 9.6						
66/02/12		0020 - 0405		265.9 - 41.9	12.5 - 44.3	0025 - 0055		268.9 - 287.1		13.2 - 17.4	
		2330 - 0010		26.2 - 259.9	209.8 - 11.0						

DATE YY/MM/DD	TIME (LT) HHMM - HHMM	16.7 GCGOARC SPACE FLIGHT CENTER		ACTIVITY CML III	IO Pt
		OBSERVATIONS CML III	IC PHASE		
66/02/13	C045 - C115 C125 - C405 2315 - 2340	71.5 - 89.6 95.7 - 192.4 107.6 - 182.7	220.4 - 224.5 226.0 - 248.6 50.3 - 53.8		
66/02/14	C00C - C015 C03C - C400	194.8 - 202.8 212.9 - 339.9	50.6 - 58.8 60.9 - 90.8	0100 - 0115	65.2 - 67.3
66/02/15	0010 - C355 2315 - C005	351.3 - 127.3 106.5 - 18.5	262.2 - 293.8 97.5 - 268.5		
66/02/16	C120 - C350	184.1 - 274.8	115.3 - 136.7		
66/02/17	C115 - C350	331.5 - 65.2	317.9 - 339.6		
66/02/18	C05C - C345	106.9 - 212.7	158.3 - 183.2		
66/02/19	C01C - C340	233.2 - 0.1	355.4 - 25.0		
66/02/20	C00C - C020 C05C - C335	17.6 - 35.7 47.8 - 147.5	198.3 - 202.6 205.4 - 228.7		
66/02/21	002C - C335 2315 - C330	180.1 - 298.0 291.3 - 295.0	43.7 - 71.4 238.8 - 70.7	0240 - 0335 2335 - 0100 2335 - 0100	63.6 - 71.4 241.6 - 49.4 241.6 - 49.4
66/02/22	2250 - C020	66.6 - 330.6	78.1 - 247.9	2250 - 0020	78.1 - 247.9
66/02/23	C030 - C325 2240 - 2305 2315 - C320	127.0 - 232.8 211.0 - 226.1 232.1 - 229.8	92.3 - 117.2 280.4 - 283.9 285.3 - 116.5	0045 - 0235	94.4 - 110.1
66/02/24	2115 - 2200 2245 - 2320	310.0 - 337.2 4.4 - 25.6	111.8 - 118.2 124.6 - 129.6		
66/02/25	C00C - 0135 C15C - C320	45.8 - 107.2 116.3 - 170.7	135.3 - 148.8 151.0 - 163.7		

16.7 GUGUARE SPACE FLIGHT CENTER							
DATE YY/MM/LL	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III		IC PHASE	TIME(UT) HHMM - HHMM	ACTIVITY CML III	IO PHASE
66/02/26	0000 - 0315	200.2 - 318.1		338.2 - 5.6	0145 - 0245	263.7 - 300.0	352.9 - 1.4
	2345 - 0310	341.6 - 345.1		183.3 - 4.9			
66/02/28	0000 - 0305	141.1 - 252.9		24.9 - 51.1	0045 - 0130	168.3 - 155.5	21.3 - 37.7
66/03/01	0030 - 0300	305.6 - 40.3		233.4 - 234.5	0030 - 0130	309.6 - 345.9	232.4 - 241.9
					0145 - 0205	355.0 - 7.0	244.0 - 246.8
					0225 - 0300	19.1 - 40.3	245.6 - 254.5
					2235 - 0120	30.5 - 339.8	59.9 - 240.5
	2215 - 0255	48.4 - 37.3		57.1 - 253.8	2235 - 0120	30.5 - 339.8	59.9 - 240.5
66/03/02	2245 - 0250	187.0 - 184.7		265.2 - 56.2			
66/03/03	2330 - 0250	4.6 - 335.1		114.9 - 299.5			
66/03/05	0055 - 0225	206.4 - 260.8		329.9 - 342.6	0200 - 0215	245.7 - 254.7	339.0 - 341.1
	2335 - 0220	308.4 - 257.8		162.8 - 341.9			
66/03/07	0045 - 0215	141.1 - 195.5		15.2 - 27.9	2345 - 0215	255.3 - 195.5	211.0 - 27.9
	2340 - 0215	252.3 - 155.5		210.3 - 27.9	2345 - 0215	255.3 - 195.5	211.0 - 27.9
66/03/09	0000 - 0215	54.7 - 136.3		55.8 - 75.0	0000 - 0115	54.7 - 100.1	55.8 - 66.5
66/03/10	0005 - 0105	208.2 - 244.4		260.4 - 268.8			
66/03/11	0035 - 0210	16.7 - 74.1		107.9 - 121.5			
66/03/12	0000 - 0035	145.9 - 167.1		306.1 - 311.0			
	0045 - 0205	173.1 - 221.5		312.4 - 323.6			
66/03/13	0030 - 0200	314.4 - 8.8		154.3 - 167.1	0030 - 0055	314.4 - 329.5	154.3 - 157.9
66/03/14	2000 - 0200	92.0 - 159.2		163.0 - 9.5	2325 - 0035	215.9 - 107.8	192.0 - 357.5
66/04/08	0440 - 0550	54.0 - 56.9		76.5 - 86.4			
66/04/20	0315 - 0405	7.0 - 37.2		343.7 - 350.8			
66/10/07	0920 - 1145	226.7 - 314.3		33.0 - 55.4			

16.7 GCDARC SPACE FLIGHT CENTER						
DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	IC PHASE	TIME(UT) HHMM - HHMM	ACTIVITY CML III	IO PHASE
66/10/08	0830 - 1100	346.9 - 77.6	230.8 - 252.1	0830 - 0900 0940 - 1040	346.9 - 5.1 29.3 - 65.5	230.8 - 235.0 240.7 - 249.3
66/10/09	0910 - 1115	161.6 - 237.2	80.0 - 57.5	0910 - 0940	161.6 - 179.8	80.0 - 84.2
66/10/10	0910 - 1115	312.1 - 51.9	283.6 - 307.1			
66/10/11	0905 - 1150	95.6 - 195.3	125.7 - 148.9			
66/10/12	0900 - 1120	247.1 - 331.7	329.2 - 349.0			
66/10/13	0900 - 1115	37.6 - 143.4	171.7 - 156.5			
66/10/14	0855 - 1015	185.1 - 257.6	15.3 - 32.1	1025 - 1055	239.5 - 257.6	27.9 - 32.1
66/10/15	0855 - 1110	335.6 - 57.2	217.9 - 237.2	0950 - 1050	8.8 - 45.1	225.8 - 234.3
66/10/16	0850 - 1110	123.1 - 207.7	61.0 - 80.6	0915 - 1005 1015 - 1045	138.2 - 168.4 174.4 - 192.6	64.5 - 71.5 72.9 - 77.1
66/10/17	0800 - 1100	243.3 - 352.2	257.3 - 282.9	0800 - 0820 0905 - 0940	243.3 - 255.4 262.6 - 303.8	257.3 - 260.1 266.6 - 271.5
66/10/18	0840 - 1115	58.0 - 151.7	106.1 - 127.8			
66/10/19	0840 - 1120	208.6 - 305.3	310.1 - 332.8	0910 - 1110	226.7 - 299.2	314.4 - 331.4
66/10/20	0835 - 1100	356.1 - 83.7	151.9 - 172.4			
66/10/21	0830 - 1130	143.6 - 252.4	355.6 - 20.9	0830 - 0930	143.6 - 179.8	355.6 - 4.0
66/10/25	0815 - 1130	16.6 - 134.5	66.5 - 113.9	1020 - 1130	92.2 - 134.5	104.0 - 113.9
66/10/27	0810 - 1100	314.7 - 57.4	132.4 - 156.4	0810 - 0850 1050 - 1100	314.7 - 338.9 51.4 - 57.4	132.4 - 138.0 154.9 - 156.4
66/10/28	0810 - 1140	105.2 - 232.2	326.7 - 6.3			
66/10/29	0805 - 1100	252.7 - 358.5	178.5 - 203.4	0905 - 1035	289.0 - 343.4	187.1 - 199.8
66/10/30	0800 - 1130	40.3 - 167.2	22.0 - 51.5			

16.7 GODDARD SPACE FLIGHT CENTER					ACTIVITY		IO PHASE
DATE VV/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III		IC PHASE	TIME(UT) HHMM - HHMM		
		CML III			CML III		
66/10/31	0755 - 1110	187.8 - 305.7	224.3 - 252.1		0940 - 1025	251.3 - 278.5	239.3 - 245.7
66/11/01	0750 - 1100	335.3 - 90.2	67.1 - 93.8				
66/11/02	0750 - 1100	125.9 - 240.8	270.9 - 297.9				
66/11/03	0745 - 1205	273.4 - 70.6	113.0 - 149.6				
66/11/04	0740 - 1200	61.0 - 218.2	316.6 - 353.3				
66/11/05	0740 - 1150	211.6 - 2.7	159.1 - 194.6		0935 - 0945 1050 - 1115	281.1 - 287.1 326.4 - 341.5	175.4 - 176.8 186.0 - 189.6
66/11/06	0735 - 1220	355.1 - 171.4	2.7 - 42.7				
66/11/07	0730 - 1200	146.7 - 309.9	204.8 - 243.3		0940 - 1200	225.2 - 309.9	223.3 - 243.3
66/11/08	0725 - 1115	254.2 - 73.3	47.9 - 60.1		0735 - 0850 1035 - 1050	300.3 - 345.6 49.1 - 58.1	45.3 - 59.8 74.5 - 76.6
66/11/09	0720 - 1120	81.8 - 226.9	250.7 - 284.9				
66/11/10	0720 - 1145	232.3 - 32.6	93.7 - 131.0				
66/11/11	0715 - 1140	15.9 - 180.1	257.2 - 334.7				
66/11/12	0710 - 1130	167.5 - 324.7	139.1 - 175.9		0950 - 1010	264.2 - 276.3	161.7 - 164.6
66/11/13	0705 - 1155	315.0 - 130.4	342.8 - 23.6				
66/11/14	0705 - 1125	105.6 - 262.8	165.5 - 222.5		0955 - 1115	208.4 - 256.8	209.7 - 221.1
66/11/15	0700 - 1150	253.2 - 68.5	28.9 - 69.4		0720 - 0740 0755 - 0940	265.3 - 277.4 266.5 - 313.7	31.6 - 34.4 36.5 - 42.8
66/11/16	0655 - 1055	40.8 - 185.9	231.4 - 265.6				
66/11/17	0650 - 1200	188.4 - 15.8	74.0 - 117.5		0900 - 1100	267.0 - 339.5	92.2 - 109.1
66/11/18	0650 - 1155	339.0 - 163.4	278.0 - 321.3		0650 - 0715	339.0 - 354.1	278.0 - 281.6

16.7 GSCCARE SPACE FLIGHT CENTER							
DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	IC PHASE	TIME(UT) HHMM - HHMM	ACTIVITY CML III	IO PHASE	
66/11/19	C645 - 1140	126.6 - 304.9	120.0 - 161.7	0755 - 0805 0935 - 1045	168.9 - 174.9 229.3 - 271.7	129.9 - 131.3 144.0 - 153.9	
66/11/20	0650 - 1150	280.2 - 101.6	325.1 - 7.4				
66/11/21	C635 - 1110	61.7 - 228.0	165.6 - 204.8				
66/11/22	C630 - 1105	205.3 - 15.6	9.1 - 47.7	0945 - 1025	327.2 - 351.4	36.5 - 42.1	
66/11/23	C625 - 1130	356.9 - 181.3	211.6 - 255.0	1050 - 1105	157.2 - 166.2	249.3 - 251.5	
66/11/24	C625 - 1120	147.6 - 325.9	55.1 - 56.5	0650 - 0720 0850 - 1020	162.7 - 180.8 235.2 - 289.6	55.6 - 62.8 75.4 - 88.1	
66/11/25	0620 - 1110	290.2 - 110.5	258.3 - 299.4	0640 - 0730	307.3 - 337.5	261.1 - 268.2	
66/11/26	C615 - 1040 C715 - 1125	82.8 - 97.9 119.0 - 270.2	100.4 - 103.9 108.3 - 144.2	1040 - 1110	243.0 - 261.1	137.8 - 142.0	
66/11/27	C610 - 1200	230.4 - 82.0	304.1 - 353.4	0615 - 0720 0820 - 0855 0935 - 1025	233.4 - 272.7 309.0 - 330.1 354.3 - 24.5	304.8 - 314.0 322.5 - 327.4 333.0 - 340.1	
66/11/28	C605 - 1120	18.0 - 208.4	145.0 - 190.7	0815 - 0905	247.2 - 277.5	8.6 - 15.6	
66/11/29	0605 - 1140	168.6 - 11.2	353.3 - 37.3	1140 - 1150	161.8 - 167.9	241.0 - 242.5	
66/11/30	C600 - 1200	316.2 - 173.9	152.6 - 243.9	0715 - 0805	152.2 - 182.5	46.9 - 53.9	
66/12/01	C555 - 1125	103.9 - 309.4	35.7 - 23.3	0555 - 0605	254.5 - 260.5	239.3 - 240.8	
66/12/02	0550 - 1030 C655 - 1150	251.5 - 275.7 290.8 - 109.1	238.6 - 244.3 247.9 - 259.8	0720 - 1005	96.5 - 196.3	54.3 - 117.6	
66/12/03	0545 - 1115	35.1 - 238.6	81.0 - 127.5	0720 - 0815 0840 - 0850 0940 - 0955 1100 - 1115	247.2 - 280.4 295.6 - 301.6 331.8 - 340.9 20.2 - 29.3	258.7 - 306.5 310.1 - 311.5 318.5 - 320.6 329.8 - 331.9	
66/12/04	0545 - 1145	185.8 - 47.4	285.3 - 336.1				
66/12/05	C540 - 1140	337.4 - 195.0	127.2 - 176.3				

15.7 CECARD SPACE FLIGHT CENTER						
DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	ID PHASE	TIME(UT) HHMM - HHMM	ACTIVITY CML III	ID PHASE
66/12/06	0540 - 1125	128.0 - 342.7	331.7 - 21.5			
66/12/07	0530 - 1130	272.6 - 130.3	173.1 - 224.4			
66/12/08	0525 - 1125	60.3 - 277.9	16.4 - 66.9	0800 - 0900 1055 - 1125	154.0 - 150.3 259.8 - 277.9	38.1 - 46.5 62.6 - 66.9
66/12/09	0525 - 1120	210.9 - 65.6	214.8 - 270.4	0620 - 0920	244.2 - 353.0	227.7 - 253.3
66/12/10	0520 - 1115	358.6 - 213.2	62.4 - 112.4	0750 - 0930	89.3 - 149.7	83.5 - 57.6
66/12/11	0515 - 1115	146.2 - 3.9	265.9 - 313.9	0910 - 1115	288.3 - 3.9	295.2 - 316.9
66/12/12	0510 - 1110	293.9 - 151.5	107.9 - 188.9			
66/12/13	0505 - 1105	81.5 - 299.2	311.7 - 2.4			
66/12/14	0500 - 1100	255.4 - 86.8	160.8 - 205.0			
66/12/15	0500 - 1100	15.8 - 237.5	357.9 - 48.4	0910 - 0930	171.0 - 183.1	33.0 - 35.8
66/12/16	0455 - 1050	167.5 - 22.1	200.5 - 251.1	0605 - 0655 0830 - 0850 0905 - 1050	209.8 - 240.0 297.5 - 309.6 318.6 - 22.1	210.5 - 217.6 231.1 - 234.0 236.1 - 251.1
66/12/17	0450 - 1100	315.1 - 178.9	43.3 - 55.3	0510 - 0545 0640 - 0920 0940 - 1100	327.2 - 348.4 21.6 - 118.4 130.5 - 178.9	46.1 - 51.0 58.7 - 81.2 84.0 - 95.3
66/12/18	0445 - 1045	102.8 - 320.5	246.6 - 297.7	0905 - 1045	260.0 - 320.5	283.5 - 297.7
66/12/19	0440 - 1040	250.4 - 108.1	88.8 - 139.7	0540 - 0745	286.7 - 2.3	57.2 - 114.9
66/12/20	0435 - 1035	38.1 - 255.8	292.6 - 343.3	0810 - 0830	168.1 - 180.2	322.9 - 325.7
66/12/22	0430 - 1025	336.4 - 151.1	338.9 - 28.7	0430 - 0450	336.4 - 348.5	338.9 - 341.7
66/12/23	0425 - 0615 0730 - 0750 0830 - 1015	124.1 - 150.6 236.0 - 248.1 272.2 - 335.7	181.3 - 196.9 207.6 - 210.5 216.2 - 231.2			
				0830 - 0840	272.2 - 278.3	216.2 - 217.6

16.7 GCDARC SPACE FLIGHT CENTER						
DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	IC PHASE	TIME(UT) HHMM - HHMM	ACTIVITY CML III	IO PHASE
66/12/24	C420 - C750	271.8 - 38.8	24.3 - 53.8	0420 - 0510	271.8 - 302.0	24.3 - 31.3
66/12/26	C400 - 1000	142.4 - 0.1	113.5 - 166.6	0705 - C710 0745 - 0810 0825 - 0940	254.3 - 257.3 276.5 - 293.6 302.7 - 348.0	141.7 - 142.4 147.4 - 150.9 153.1 - 163.7
66/12/29	0400 - 1000	293.1 - 150.8	320.0 - 10.5			
66/12/31	C350 - C950	226.5 - 86.1	5.5 - 56.0			
67/01/01	C345 - C455 C605 - C945	16.1 - 58.5 100.8 - 233.8	208.4 - 218.3 228.3 - 259.6			
67/01/02	C340 - C940	163.8 - 21.5	50.9 - 101.6			
67/01/03	C335 - C500 C540 - C925	311.5 - 2.9 27.1 - 169.2	254.5 - 266.6 272.2 - 305.5			
67/01/04	0330 - C745	99.1 - 253.3	96.5 - 132.6	0445 - 0515	144.5 - 162.6	107.1 - 111.4
	C800 - C805 C815 - C930	262.4 - 265.4 271.5 - 316.8	134.8 - 135.5 136.9 - 147.6			
67/01/05	C325 - C500 C555 - C720 C745 - C925	246.8 - 304.3 337.5 - 35.0 44.0 - 104.5	300.4 - 313.8 321.5 - 334.9 337.0 - 351.0			
67/01/06	0320 - C345 C640 - C920	34.5 - 49.6 155.4 - 252.2	142.5 - 146.0 170.9 - 193.7			
67/01/07	0320 - C920	185.2 - 42.9	346.7 - 37.2	0525 - 0630	260.8 - 300.1	4.2 - 13.3
67/01/08	C445 - C915	27.3 - 190.5	202.2 - 240.6			
67/01/09	C310 - C910	120.5 - 338.2	32.1 - 82.7	0600 - 0730 0840 - 0910	223.3 - 277.7 320.1 - 338.2	56.0 - 68.7 76.5 - 82.7
67/01/10	0305 - C905	268.2 - 125.9	235.5 - 286.6	0405 - 0545	304.5 - 4.9	244.1 - 258.3
67/01/11	C300 - C900	55.9 - 273.5	77.7 - 128.6	0400 - 0555	92.1 - 161.7	86.2 - 102.4

DATE		TIME(UT)	OBSERVATIONS		16.7		GCDARC SPACE FLIGHT CENTER		ACTIVITY		IO PHASE	
YY/MM/DD		HHMM - HHMM	CML III		IO PHASE	TIME(UT)			CML III			
		HHMM - HHMM				HHMM - HHMM						
67/01/12		C255 - C630	203.5 - 297.3		281.5 - 303.4	0335 - 0525			227.7 - 294.2		287.2 - 302.7	
		C540 - C855	303.3 - 61.2		304.8 - 325.3	0545 - 0600			306.3 - 315.4		305.5 - 307.6	
						0615 - 0640			324.5 - 339.6		309.8 - 313.3	
67/01/13		C250 - C650	351.2 - 206.9		123.5 - 174.7							
67/01/15		C225 - C825	160.2 - 17.9		262.7 - 313.5	0700 - 0715			326.5 - 335.6		301.5 - 303.6	
67/01/20		C220 - C820	307.9 - 165.5		104.6 - 155.8							
67/01/21		C215 - C500	95.5 - 195.3		308.4 - 321.6							
		C540 - C900	215.5 - 340.4		337.3 - 5.3	0605 - 0900			234.6 - 340.4		340.8 - 5.3	
67/01/22		C200 - C610	237.1 - 100.8		149.3 - 202.0	0200 - 0455			237.1 - 342.9		145.3 - 174.2	
67/01/23		C205 - C645	30.8 - 272.7		354.0 - 50.1	0535 - 0630			157.8 - 151.1		23.4 - 31.1	
						0745 - 0845			236.4 - 272.7		41.7 - 50.1	
67/01/24		C200 - C830	178.5 - 54.3		156.9 - 252.4	0320 - 0750			226.9 - 30.1		208.3 - 246.7	
						0805 - 0830			39.2 - 54.3		248.8 - 252.4	
67/01/25		0155 - C645	326.1 - 141.5		39.4 - 80.3	0155 - 0210			326.1 - 335.2		39.4 - 41.5	
						0420 - 0600			53.8 - 114.3		55.8 - 73.9	
67/01/26		C155 - C755	116.8 - 334.5		243.8 - 294.7	0610 - 0650			271.0 - 295.2		279.9 - 285.5	
67/01/27		C130 - C745	252.4 - 119.1		83.0 - 136.1	0130 - 0145			252.4 - 261.4		83.0 - 85.1	
67/01/28		C200 - C220	61.2 - 73.3		291.7 - 294.6							
		C315 - C800	106.5 - 278.8		302.3 - 342.4	0600 - 0630			206.3 - 224.4		325.5 - 329.7	
						0645 - 0830			233.5 - 278.8		331.8 - 342.4	
67/01/29		C140 - C740	159.7 - 57.4		131.7 - 183.0	0230 - 0510			230.0 - 326.7		138.8 - 161.6	
67/01/30		C135 - C735	347.4 - 205.0		335.2 - 25.7							
67/01/31		C135 - C735	138.0 - 355.7		178.6 - 229.9	0410 - 0545			231.8 - 289.2		200.7 - 214.2	
						0610 - 0735			304.3 - 355.7		217.8 - 229.9	
67/02/01		C125 - C725	282.6 - 140.3		20.6 - 71.3	0715 - 0725			134.3 - 140.3		69.9 - 71.3	

DATE		TIME(UT)		OBSERVATIONS		16.7		GICCARD SPACE FLIGHT CENTER		ACTIVITY		IO PHASE	
VR/NN/CL		TIME(UT)		CML III		IC PHASE		TIME(UT)		CML III		IO PHASE	
		HHMM - HHMM						HHMM - HHMM					
67/02/02	C120 - C120	70.1	227.9	224.1	275.1	0450 - 0600	0640 - 0700	197.2 - 235.6	253.9 - 263.8	269.4 - 272.3			
67/02/03	C125 - C125	75.6	224.0	67.6	117.1	0140 - 0320	0605 - 0630	233.0 - 293.5	69.7 - 83.8	107.2 - 110.7			
67/02/04	C155 - C155	32.7	220.2	276.4	320.0								
67/02/05	C110 - C110	156.2	13.8	112.7	163.9	0110 - 0125	0320 - 0500	156.2 - 165.2	112.7 - 114.8	131.2 - 145.4			
67/02/06	C135 - C150	321.9	331.0	320.6	322.7								
67/02/07	C200 - C175	337.0	161.5	324.1	6.9								
67/02/08	C100 - C145	91.4	300.0	158.8	208.0	0150 - 0400	0430 - 0645	121.6 - 200.2	165.9 - 184.5	188.7 - 208.0			
67/02/09	C300 - C155	314.6	96.7	19.3	52.3	0500 - 0535		27.2 - 48.3	36.2 - 41.1				
67/02/10	C150 - C210	2.9	75.0	213.5	216.4	0400 - 0410		141.5 - 147.6	232.0 - 233.4				
67/02/11	C220 - C150	81.0	244.3	217.8	256.1	0445 - 0455	0540 - 0650	168.7 - 174.8	238.4 - 239.8	246.2 - 256.1			
67/02/12	C035 - C115	105.4	133.6	52.9	58.6	0045 - 0645		174.2 - 31.9	47.2 - 98.1				
67/02/13	C130 - C135	142.7	327.1	100.7	144.1	0015 - 0445		306.7 - 110.0	247.4 - 285.6				
67/02/14	C030 - C130	257.0	114.7	256.7	347.2	0100 - 0115	0355 - 0610	124.6 - 133.6	56.5 - 98.6				
67/02/15	C050 - C115	59.7	74.9	142.5	146.0	0600 - 0630		230.4 - 312.0	121.3 - 140.5				
67/02/16	C130 - C130	83.9	192.8	148.2	173.8			257.0 - 24.0	296.7 - 326.2				
67/02/17	C450 - C130	204.8	265.3	176.7	190.9	0600 - 0630		247.2 - 265.3	186.7 - 190.9				
67/02/18	C200 - C140	43.3	212.6	200.0	239.8	0610 - 0640		194.4 - 212.6	235.5 - 239.8				
67/02/19	C015 - C160	130.4	339.0	28.2	76.8	0320 - 0420		242.3 - 278.5	54.2 - 62.7				

16.7 GODDARD SPACE FLIGHT CENTER						
DATE YY/MM/DD	OBSERVATIONS CML III		IC PHASE		ACTIVITY CML III	
	TIME(UT) HHMM - HHMM		TIME(UT) HHMM - HHMM		IO PHASE	
67/03/01	C120 - C525	176.6 - 324.8	323.6 - 355.0	0340 - 0450	261.3 - 303.6	340.2 - 350.0
67/03/02	0200 - 0250 C315 - C500	351.4 - 21.6 36.7 - 100.2	169.7 - 176.8 180.4 - 195.3			
67/03/03	C145 - C455	132.9 - 247.7	10.8 - 37.5	0220 - 0325	154.0 - 193.3	15.7 - 24.8
67/03/04	C230 - 0320 0355 - C455	310.6 - 346.9 2.0 - 38.3	221.4 - 229.9 233.4 - 241.9			
67/03/05	C230 - C315 0405 - C455	101.1 - 128.3 156.6 - 168.8	64.0 - 70.4 77.4 - 84.5	0405 - 0450	158.6 - 185.8	77.4 - 83.8
67/03/06	C240 - 0500	257.7 - 342.4	289.9 - 289.6	0255 - 0310 0325 - 0445	266.8 - 275.9 264.9 - 333.3	272.0 - 274.1 276.2 - 287.5
67/03/09	C230 - 0300 C335 - C345	343.3 - 1.4 22.6 - 28.6	158.6 - 162.9 187.8 - 189.3			
67/03/10	C240 - C335	135.8 - 173.1	3.3 - 11.0	0250 - 0335	145.9 - 173.1	4.7 - 11.0
67/03/13	C235 - 0435	228.3 - 300.9	253.8 - 270.7			
67/03/14	0250 - 0500	27.9 - 106.5	58.5 - 117.0			
67/03/18	C340 - 0100	305.5 - 203.4	9.2 - 177.6	2340 - 0020	305.5 - 179.2	9.2 - 171.9
67/05/12	1020 - 1045	302.6 - 317.7	87.5 - 51.0			
67/05/14	C555 - 1040	228.2 - 255.4	130.3 - 136.6			
67/05/15	1000 - 1040	21.6 - 45.8	333.9 - 339.6			
67/05/19	C550 - 1040	257.1 - 287.3	66.3 - 73.3	1015 - 1025	272.2 - 278.3	69.8 - 71.2
67/10/06	0810 - 0945	233.4 - 290.8	267.5 - 280.9			
67/10/14	C740 - C900	338.7 - 27.0	50.6 - 101.8			

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	16.7 GCDARC SPACE FLIGHT CENTER		ACTIVITY CML III	IO PHASE
		OBSERVATIONS CML III	TIME(UT) HHMM - HHMM		
67/10/14	C510 - 1010 1030 - 1045	33.1 - 65.3 81.4 - 90.5	101.2 - 111.6 114.4 - 116.5		
67/10/15	C730 - 1045	123.1 - 240.9	251.9 - 315.7		
67/10/16	C730 - 0945 1000 - 1025	273.5 - 355.1 4.2 - 19.3	135.5 - 154.4 156.5 - 160.0		
67/10/17	C730 - 1020	63.9 - 166.7	339.0 - 3.2		
67/10/18	C725 - 0750 C930 - 1035	211.3 - 226.5 286.9 - 326.2	181.1 - 184.6 198.7 - 207.8		
67/10/19	C730 - 0740 C805 - 1010	4.8 - 10.9 26.0 - 101.5	25.9 - 27.3 30.9 - 48.5		
67/10/20	C720 - 1040	149.2 - 270.1	226.9 - 255.2	0920 - 1040 221.7 - 270.1	243.9 - 255.2
67/10/21	C825 - 1020	338.9 - 48.5	80.3 - 96.5		
67/10/27	C945 - 1025	210.0 - 234.2	230.8 - 236.5	0945 - 1025 210.0 - 234.2	230.8 - 236.5
67/10/28	C710 - 1020	266.8 - 21.7	53.2 - 60.0		
67/11/01	C655 - 0740 C750 - 1035	139.6 - 166.8 172.9 - 272.6	143.9 - 150.2 151.6 - 174.8		
67/11/04	C945 - 1120	333.8 - 37.3	58.6 - 73.4		
67/11/05	C940 - 1120	121.3 - 187.8	260.6 - 276.2		
67/11/06	C940 - 1110	271.8 - 326.2	104.4 - 117.0		
67/11/07	C720 - 1050	337.6 - 104.6	287.8 - 317.7		
67/11/08	C715 - 1105	125.1 - 264.1	130.4 - 162.7	1025 - 1100 240.0 - 261.1	157.0 - 162.0
67/11/09	C930 - 1055	357.2 - 48.6	-6.6 - 5.4		

16.7 GUCDARD SPACE FLIGHT CENTER			
DATE	TIME(UT)	OBSERVATIONS	IO PHASE
YY/MM/DD	HHMM - HHMM	CML III	IO PHASE
67/11/10	0620 - 1120	32.8 - 220.2	169.1 - 212.8
67/11/11	0610 - 0805	177.3 - 246.8	12.0 - 28.2
	0840 - 0845	268.0 - 277.0	33.2 - 35.3
	0915 - 1140	289.1 - 16.8	38.1 - 58.5
67/11/12	0610 - 1200	327.8 - 179.4	214.4 - 264.1
67/11/13	0610 - 1105	118.3 - 256.6	58.7 - 100.0
67/11/14	0600 - 1125	262.8 - 95.2	260.0 - 306.3
67/11/15	0552 - 1020	50.3 - 216.5	103.0 - 141.5
67/11/16	0555 - 1050	200.8 - 19.1	306.5 - -11.6
67/11/19	0545 - 1140	286.3 - 140.9	194.7 - 245.0
67/11/20	0540 - 1125	73.8 - 282.3	38.3 - 86.7
67/11/21	0535 - 1120	221.3 - 75.9	240.2 - 230.7
67/11/22	0530 - 0810	8.8 - 105.5	83.4 - 105.9
67/11/23	0525 - 0700	156.3 - 213.7	286.0 - 299.5
	0805 - 1125	253.0 - 13.9	308.8 - 337.2
67/11/24	0520 - 1115	303.8 - 158.4	128.5 - 178.4
67/11/28	0510 - 1020	179.9 - 13.4	220.6 - 266.1
	1040 - 1135	15.4 - 52.7	267.5 - 275.3
67/11/29	0510 - 0755	330.5 - 70.2	64.7 - 87.8
	0815 - 1050	82.3 - 176.0	50.6 - 112.3
	1115 - 1140	191.2 - 206.3	115.8 - 119.3

10.7 GCEC/ARC SPACE FLIGHT CENTER			
DATE	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	IO PHASE
67/11/20	C505 - 1140	118.0 - 336.8	267.0 - 323.3
			0850 - 1140 254.1 - 356.8 299.1 - 323.3
67/12/01	0505 - C715	268.0 - 347.2	110.5 - 128.7
	C725 - 1150	353.2 - 153.4	130.1 - 167.3
67/12/02	C505 - C540	55.1 - 80.3	314.3 - 319.3
	0750 - C825	158.9 - 180.1	337.8 - 17.3
	C855 - 1140	198.2 - 237.9	-13.0 - 10.3
67/12/03	C500 - 1200	206.7 - 100.6	156.3 - 215.7
			0700 - 0710 279.2 - 285.3 172.2 - 174.7
			0740 - 0800 303.4 - 315.5 178.9 - 181.7
			0815 - 0900 324.6 - 351.8 183.8 - 190.2
67/12/04	C455 - C705	354.2 - 72.8	-0.0 - 18.3
	C715 - 1140	78.9 - 239.1	19.8 - 57.0
67/12/05	C450 - 1135	141.8 - 26.6	201.8 - 259.3
			0530 - 0610 166.0 - 150.1 207.5 - 213.1
			0630 - 1100 202.2 - 5.5 216.0 - 254.4
67/12/06	0445 - 1155	289.3 - 189.3	45.4 - 105.7
			0920 - 1155 95.6 - 189.3 83.9 - 105.7
67/12/07	0730 - 1110	175.6 - 312.6	271.8 - 303.1
67/12/08	0440 - 1125	227.4 - 112.3	51.2 - 148.0
			0525 - 0820 254.6 - 0.4 57.5 - 122.1
67/12/09	C440 - 1140	18.0 - 271.9	294.9 - -5.5
			0850 - 0950 169.2 - 205.4 330.4 - 338.9
67/12/10	C435 - 1200	165.6 - 74.6	137.1 - 199.9
			0715 - 0925 262.3 - 340.9 159.6 - 177.9
			0945 - 1055 353.0 - 35.3 180.8 - 190.7
67/12/12	0715 - C940	203.5 - 291.1	206.6 - 227.2
67/12/13	C710 - 1125	351.1 - 151.3	50.1 - 67.2
			0950 - 1135 87.8 - 151.3 72.5 - 87.2
67/12/14	0500 - 1150	63.1 - 310.9	234.6 - 293.0
			0515 - 0550 72.1 - 53.3 236.7 - 241.7
			0735 - 0820 156.8 - 184.0 254.7 - 263.1
			1020 - 1115 253.5 - 289.8 280.2 - 288.0
67/12/15	0500 - 1125	213.6 - 66.4	78.4 - 132.4
			0745 - 0815 313.4 - 331.5 101.5 - 105.7
			0900 - 0925 358.7 - 13.9 112.1 - 115.6

16.7 GODDARD SPACE FLIGHT CENTER						
DATE YY/MM/DD	TIME (LT) HHMM - HHMM	OBSERVATIONS CML III	IC PHASE	TIME (UT) HHMM - HHMM	ACTIVITY CML III	IO PHASE
67/12/16	C45E - 1145	1.2 - 249.1	281.3 - 335.5	1130 - 1145	240.0 - 249.1	337.4 - 339.5
67/12/17	C45E - C910 C550 - 1130	151.8 - 300.0 330.2 - 30.6	124.3 - 160.2 163.8 - 180.0			
67/12/18	C450 - C645	255.4 - 8.9	327.8 - -15.9			
67/12/20	C44E - C510 C80C - 1140	237.6 - 252.7 355.5 - 128.5	14.1 - 17.7 41.6 - 72.4	1030 - 1120	86.2 - 116.4	62.6 - 69.6
67/12/21	C41C - 1150	7.1 - 285.2	211.9 - 277.4	1040 - 1130	242.9 - 273.1	267.4 - 274.5
67/12/22	040C - C510 0520 - 1150	151.6 - 194.0 200.0 - 75.8	54.6 - 64.4 65.8 - 120.5	0605 - 065E 0710 - 0750 082E - 0E4C	227.2 - 257.4 266.5 - 290.7 311.8 - 320.9	72.1 - 79.1 81.2 - 86.8 91.7 - 93.8
67/12/27	C33C - C710 C73C - C74E C75E - 1125	166.6 - 299.6 311.7 - 320.8 326.8 - 93.8	-11.9 - 19.2 22.0 - 24.1 25.5 - 55.0	052E - 0700 0730 - 074E	236.1 - 293.6 311.7 - 320.8	4.4 - 17.8 22.0 - 24.1
67/12/28	C330 - 1050	317.2 - 223.3	150.8 - 253.3	0805 - 082E 0920 - 1050	123.5 - 135.6 168.9 - 223.3	229.8 - 232.7 240.5 - 253.3
67/12/29	032E - C540	104.9 - 331.6	34.3 - 66.9	0450 - 0540	156.2 - 186.5	46.3 - 53.3
67/12/30	C32C - 1120	251.5 - 182.7	236.7 - 305.0	0530 - 060E 1000 - 110E	331.1 - 352.2 134.3 - 173.6	255.2 - 260.2 293.7 - 302.9
67/12/31	C32C - C64E 104C - 1225	43.1 - 239.6 305.1 - 12.6	80.3 - 125.9 142.1 - 156.9	0410 - 0700	73.3 - 176.1	87.3 - 111.2
68/01/01	C31E - C640 C65E - 1205	190.7 - 27.2 36.3 - 154.2	283.4 - 329.6 331.7 - -1.4	055E - 0605	287.5 - 293.5	306.2 - 307.6
68/01/05	C64E - 1145	164.0 - 21.7	36.8 - 69.3	0830 - 0840 102E - 104C	263.8 - 269.8 333.3 - 342.4	62.0 - 63.4 78.1 - 80.2
68/01/06	051E - 1125	256.5 - 166.3	237.8 - 291.9	0515 - 0735	296.5 - 21.2	237.8 - 257.7

16.7 GODDARD SPACE FLIGHT CENTER						
DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	IC PHASE	TIME(UT) HHMM - HHMM	ACTIVITY CML III	IO PHASE
68/01/07	C53E - 1125	95.3 - 310.9	84.2 - 133.3	0545 - 0755 0810 - 0835	105.3 - 183.9 193.0 - 208.1	85.6 - 103.8 105.9 - 109.4
68/01/08	C530 - 1025	246.9 - 71.3	287.4 - 330.7	0820 - 0830 0845 - 0855 0910 - 0935	349.7 - 355.8 4.8 - 10.9 19.9 - 35.1	311.6 - 313.0 315.1 - 316.5 318.7 - 322.2
68/01/09	C525 - 1125	34.6 - 252.2	129.6 - 180.4			
68/01/10	C520 - 1045	182.2 - 18.7	333.3 - 19.1	0650 - 0755 0900 - 0950	236.6 - 275.9 315.2 - 345.4	-14.0 - -4.8 4.4 - 11.4
68/01/11	C41C - C510 C530 - 1005	290.5 - 326.8 338.9 - 145.2	166.0 - 174.5 177.4 - 216.4	0530 - 0550	338.9 - 351.0	177.4 - 180.2
68/01/13	C510 - 1005	268.2 - 86.5	221.9 - 264.0	0615 - 0840	307.5 - 35.1	231.2 - 251.9
68/01/14	C51C - C545 C55E - C700 C715 - 1010	58.8 - 80.0 86.0 - 125.3 134.4 - 240.2	65.7 - 70.6 72.0 - 81.1 83.2 - 107.8	0715 - 0915	134.4 - 207.0	83.2 - 100.1
68/01/15	C50C - 1105	203.4 - 64.1	268.0 - 319.9	0750 - 0855	306.2 - 345.5	292.2 - 301.5
68/01/16	C500 - 1100	354.1 - 211.8	111.1 - 161.9			
68/01/17	C450 - 1020	138.8 - 356.4	314.1 - 4.9			
68/01/18	C45C - 1020	289.4 - 147.1	156.7 - 207.8			
68/01/19	C44E - 1045	77.1 - 294.8	0.5 - 51.1			
68/01/20	C140 - C320 C34E - 1140	115.9 - 182.4 191.5 - 118.7	177.1 - 192.7 194.8 - 262.5	0405 - 0430 0755 - 0815 0915 - 0555	203.6 - 218.7 342.6 - 354.7 31.0 - 55.2	157.7 - 201.2 230.4 - 233.3 241.8 - 247.5
68/01/21	0135 - 1130	263.6 - 263.3	20.7 - 104.2	0320 - 0415 0450 - 0550 0820 - 0915	327.1 - 0.3 21.5 - 57.8 148.4 - 181.7	35.4 - 43.2 48.1 - 56.5 77.5 - 85.2
68/01/22	C310 - 1130	111.7 - 54.0	237.4 - 308.6	0415 - 0455	151.0 - 175.2	246.7 - 252.4

16.7 GODDARD SPACE FLIGHT CENTER									
DATE YY/MM/CD	TIME(UT) HHMM - HHMM	OBSERVATIONS		IO PHASE		ACTIVITY		IO PHASE	
		CML III		IO PHASE		CML III		IO PHASE	
68/01/23	C140 - 0655	208.0 -	39.4	68.2 -	112.4	0250 - 0540 0615 - 0635	250.3 - 353.1 14.2 - 26.3	72.0 - 101.9 106.8 - 109.6	
	C705 - 1145	44.5 -	213.8	113.8 -	153.4				
68/01/24	0200 - 1125	10.7 -	352.4	275.0 -	-5.0				
68/01/25	C420 - 1020	246.1 -	103.7	137.6 -	168.6				
68/01/26	C415 - 0600 0650 - 1015	33.7 - 57.2 127.5 - 251.4	-3.7 3.3 - 32.1	341.5 - 3.3 - 32.1					
68/01/27	0410 - 1010	181.4 -	39.1	183.5 -	234.8	0530 - 0635 0840 - 0855	229.8 - 269.1 344.7 - 353.7	194.9 - 204.1 222.0 - 224.1	
68/01/28	C405 - 1005	329.1 -	186.7	27.0 -	77.5	0720 - 0800 0850 - 0900 0920 - 1000	87.0 - 111.2 141.4 - 147.4 159.5 - 163.7	54.4 - 60.0 67.0 - 68.4 71.2 - 76.8	
68/01/29	C400 - 0700	116.7 -	225.6	229.7 -	255.3	0520 - 0545 0615 - 0620	165.1 - 180.2 198.4 - 201.4	241.1 - 244.6 248.9 - 249.6	
	C715 - 1000	234.6 -	334.4	257.5 -	280.9				
68/01/30	C100 - 0505	158.6 -	91.8	47.9 -	116.0	0400 - 0500 0740 - 0800	267.4 - 303.7 40.5 - 52.5	73.2 - 81.6 104.1 - 106.9	
	1000 - 1100	125.1 -	161.4	123.8 -	132.2				
68/01/31	C450 - 0725 C755 - 1120	86.4 - 182.1 200.2 - 324.2		284.4 - 306.4 310.6 - 339.6					
68/02/01	C500 - 1120	245.1 -	114.9	128.6 -	182.4				
68/02/02	0515 - 0835 0855 - 1135	44.9 - 165.8 177.9 - 274.6		335.2 - 3.4 0.2 - 28.7		1115 - 1125	262.5 - 268.6	25.9 - 27.3	
68/02/03	C520 - 1120	198.6 -	56.2	178.7 -	230.0	0645 - 0725	250.0 - 274.1	190.8 - 196.5	
68/02/04	C425 - 1200	316.0 -	231.1	15.2 -	79.0	1040 - 1130	182.7 - 213.0	67.8 - 74.8	
68/02/05	C500 - 0725	127.9 -	215.5	223.4 -	244.1				

16.7 CECIDARE SPACE FLIGHT CENTER				ACTIVITY		IO PHASE
DATE	TIME (UT)	OBSERVATIONS	IC PHASE	TIME (UT)	CNL III	
YY/MM/DD	HHMM - HHMM	CWL III		HHMM - HHMM		
68/02/05	0845 - 1050	263.9 - 339.5	255.5 - 273.3	0845 - 0945 1015 - 1040	263.9 - 300.2 318.3 - 333.4	255.5 - 264.0 268.3 - 271.9
68/02/06	0250 - 1115	155.9 - 145.3	48.7 - 119.7	0330 - 0400 0915 - 1015	224.1 - 242.3 72.7 - 109.0	54.4 - 58.6 102.8 - 111.2
68/02/07	0310 - 1110	2.7 - 293.0	255.4 - 323.5	0310 - 0420 0940 - 1100	2.7 - 45.1 238.5 - 286.9	255.4 - 265.3 310.8 - 322.1
68/02/08	0405 - 0815	156.7 - 337.8	166.2 - 141.4	0405 - 0440 0530 - 0630	186.7 - 207.8 238.1 - 274.4	106.2 - 111.1 118.1 - 126.6
	0900 - 1100	5.1 - 77.6	147.8 - 164.8			
68/02/09	0245 - 0825	289.0 - 134.6	259.3 - -12.6	0345 - 0400 0430 - 0530 0610 - 0650	325.3 - 334.4 352.5 - 28.8 53.0 - 77.1	307.8 - 310.0 314.2 - 322.7 328.3 - 334.0
	0505 - 1050	158.6 - 222.3	-7.0 - 7.8			
68/02/10	0310 - 0350 0435 - 0910	94.8 - 119.0 146.2 - 312.5	145.6 - 151.2 157.6 - 196.7	0435 - 0530 0735 - 0745	146.2 - 179.5 255.0 - 261.1	157.6 - 165.4 183.2 - 184.6
68/02/11	0400 - 0505	275.7 - 100.2	-2.9 - 39.9	0740 - 0920	199.4 - 259.9	231.5 - 245.8
68/02/12	0400 - 0510 0545 - 0920	66.4 - 114.8 129.9 - 259.9	200.1 - 211.5 215.1 - 245.8			
68/02/13	0255 - 0310 0330 - 0825	177.8 - 186.9 199.0 - 35.5	34.9 - 37.0 39.8 - 65.4	0330 - 0440 0625 - 0635 0655 - 0705 0745 - 0800	349.7 - 32.0 95.5 - 101.5 113.6 - 119.7 143.8 - 152.9	243.5 - 253.5 268.4 - 269.9 272.7 - 274.1 275.8 - 281.9
68/02/14	0250 - 0850	325.5 - 183.1	237.8 - 289.0			
68/02/15	0245 - 0435 0505 - 0845	113.1 - 179.7 197.8 - 330.8	80.4 - 95.8 100.0 - 111.1	0320 - 0435 0610 - 0700	134.3 - 179.7 237.1 - 267.3	85.3 - 95.8 109.2 - 116.2
68/02/16	0205 - 1105	239.6 - 266.1	279.0 - -4.7	0220 - 0300 0420 - 0445	248.7 - 272.9 321.3 - 336.4	281.1 - 286.8 298.1 - 301.7
68/02/17	0340 - 0840	87.8 - 269.2	135.2 - 177.7			

DATE YR/MM/CL	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	16.7 GCCARD SPACE FLIGHT CENTER		ACTIVITY CML III	IO PHASE
			IC PHASE	TIME (UT) HHMM - HHMM		
68/02/18	C230 - C230	136.1 - 53.8	329.8 - 20.5			
68/02/19	C530 - 1110	95.6 - 301.2	198.3 - 246.7	0945 - 1015	249.8 - 268.0	234.6 - 238.9
68/02/20	C405 - C825	194.9 - 352.1	30.2 - 66.6	0505 - 0620 0745 - 0810	231.2 - 276.6 328.0 - 343.1	38.6 - 49.1 61.0 - 64.5
68/02/21	Q320 - C350 C420 - C920	118.4 - 336.5 354.7 - 176.1	227.4 - 211.7 235.9 - 278.6	0330 - 0350 0515 - 0600	324.5 - 336.5 27.9 - 55.1	228.8 - 231.7 243.8 - 250.2
68/02/22	C350 - C515	127.2 - 323.7	74.3 - 120.7			
68/02/23	C405 - C910 2330 - C300	287.0 - 111.4 271.4 - 247.7	281.4 - 324.5 85.3 - 272.1			
68/02/24	C310 - 1100	44.4 - 328.6	116.3 - 183.0			
68/02/25	C025 - C700 C710 - 1110 2340 - C655	95.3 - 334.1 340.2 - 125.3 218.8 - 331.1	257.5 - -6.7 -5.3 - 28.4 133.9 - -7.4			
68/02/26	C705 - 1105 2335 - C655	127.8 - 272.9 6.4 - 121.8	157.1 - 231.3 337.7 - 195.7			
68/02/27	Q705 - 1105	276.5 - 63.6	40.3 - 74.5			
68/02/28	C135 - C305 0400 - 1105	225.6 - 284.0 317.3 - 214.3	197.7 - 210.5 218.3 - 278.9			
68/02/29	C405 - C720	111.0 - 228.9	62.5 - 69.9	0520 - 0535	156.3 - 165.4	73.0 - 75.1
	C730 - C610 C645 - 1035	234.5 - 259.1 280.3 - 346.8	91.3 - 56.9 101.3 - 117.3			
68/03/01	C040 - C110 C220 - C235 C300 - 1055	137.7 - 155.8 196.2 - 207.2 222.3 - 145.5	237.5 - 241.7 251.7 - 253.8 257.4 - 324.7	0300 - 0455	222.3 - 291.9	257.4 - 273.8

DATE YY/MM/CC	TIME(UT) HHMM - HHMM	OBSERVATIONS		16-7		GECARD SPACE FLIGHT CENTER		ACTIVITY CML III	IO PHASE
		CML III		CML III		TIME(UT) HHMM - HHMM			
68/03/02	C310 - C400	15.0 - 49.3		101.7 - 108.7					
	C415 - C515	52.3 - 54.6		110.9 - 119.3					
	0650 - 1010	152.1 - 297.2		132.8 - 166.8		0910 - 1010	236.7 - 273.0	152.6 - 161.1	
	2300 - 2400	18.5 - 54.8		270.8 - 279.3					
68/03/06	C230 - C450	237.5 - 324.1		150.7 - 210.7		0230 - 0340	237.5 - 279.8	190.7 - 200.7	
	C550 - 1025	356.4 - 170.7		219.2 - 259.8		0750 - 0805 1020 - 1035	70.9 - 80.0 161.6 - 170.7	236.4 - 238.5 257.7 - 259.8	
68/03/07	C405 - 0445	25.6 - 109.7		47.8 - 53.4					
	C530 - C710	136.9 - 167.4		59.8 - 73.8					
	0720 - 1010	203.5 - 306.2		75.2 - 59.1		0835 - 0530	248.8 - 282.1	65.7 - 93.5	
68/03/08	C305 - C410	195.9 - 239.2		243.3 - 252.6		0315 - 0350	206.0 - 227.1	244.8 - 249.7	
	C720 - C910	354.1 - 60.6		279.6 - 295.2					
68/03/09	C300 - C340	347.5 - 11.7		65.6 - 51.2					
	C510 - C700	66.1 - 132.6		103.9 - 119.4		0510 - 0600	66.1 - 96.4	103.9 - 111.0	
	C735 - C845	153.8 - 156.1		124.4 - 124.3					
68/03/11	C900 - 1000	205.2 - 241.5		136.4 - 144.9					
	C405 - C510	328.1 - 7.4		141.3 - 151.2					
68/03/12	C735 - C555	95.1 - 179.7		171.9 - 191.7					
	C350 - 0500	105.7 - 152.0		344.2 - -6.0		0350 - 0450	109.7 - 145.9	344.2 - -7.4	
68/03/12	C600 - C910	260.8 - 303.1		19.3 - 29.1		0800 - 0845	260.8 - 288.0	19.3 - 25.6	
						0335 - 0355	251.2 - 263.3	165.1 - 188.0	
68/03/13	C325 - C400	245.2 - 266.3		163.7 - 188.7					
	C555 - C940	84.7 - 111.9		230.7 - 237.2					
68/03/14	C330 - C510	38.8 - 95.3		28.2 - 42.2		0345 - 0440	47.9 - 81.1	30.3 - 38.0	
	C620 - C945	214.2 - 265.5		68.9 - 60.8		0910 - 0925	244.4 - 253.5	75.9 - 78.0	
68/03/15	C355 - C705	204.6 - 319.4		235.6 - 262.6		0355 - 0655	204.6 - 313.4	225.6 - 261.2	
	C720 - C940	328.5 - 53.1		264.7 - 284.6		0750 - 0800	346.6 - 352.7	265.0 - 270.4	

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	16.7 GGCARD SPACE FLIGHT CENTER		ACTIVITY CML III	IN PHASE
		OBSERVATIONS CML III	IC PHASE		
68/03/16	C300 - C925	321.9 - 200.7	70.8 - 126.5	55.6 - 67.7 101.0 - 149.3 155.4 - 179.6	92.6 - 95.4 103.2 - 114.5 115.9 - 121.6
68/03/17	C400 - C630 C640 - C525	148.8 - 312.0 318.1 - 345.3	283.7 - 321.8 323.2 - 329.6		
68/03/18	C200 - C525	226.9 - 135.9	109.4 - 172.5		
68/03/19	C405 - C525 C540 - C630	93.0 - 141.4 150.5 - 180.7	311.5 - 342.7 344.8 - 8.1		
68/03/20	C405 - C700	243.6 - 349.5	174.4 - 199.4	0405 - 0445 0550 - 0700	174.4 - 180.1 189.4 - 195.4
	C720 - C750 C830 - C915	1.5 - 19.7 43.9 - 71.1	202.2 - 206.5 212.2 - 218.6		
68/03/21	C410 - C520 C750 - C915	37.3 - 75.6 170.3 - 221.7	19.0 - 28.8 49.8 - 61.8		
68/03/22	C415 - C710	190.9 - 296.7	223.4 - 248.3	0500 - 0645	229.8 - 244.8
68/03/23	C450 - C630 C650 - C710	2.6 - 63.1 75.2 - 87.3	71.4 - 85.5 88.3 - 51.1		
68/03/24	C400 - C650	123.0 - 258.3	268.7 - 309.7	0700 - 0805	294.2 - 303.4
68/03/25	C350 - C430 C445 - C550 C620 - C645 C800 - C900	267.5 - 291.7 300.8 - 340.1 358.2 - 13.3 58.7 - 94.9	109.9 - 115.6 117.7 - 126.9 131.2 - 124.7 145.3 - 153.9	0355 - 0420	110.6 - 114.2
68/03/26	C630 - C820	154.8 - 221.3	336.9 - 7.6		
68/03/29	C400 - C420 C450 - C520	155.9 - 168.0 185.1 - 204.2	205.1 - 209.0 213.2 - 217.5		
68/03/30	C530 - C640	0.9 - 115.7	52.0 - 68.7		

DATE		TIME(UT)	OBSERVATIONS		GLC/DARD SPACE FLIGHT CENTER		ACTIVITY		IO PHASE	
YY/MM/DD	HHMM	HHMM	CML III	TIME(UT)	HHMM	HHMM	CML III	HHMM	HHMM	HHMM
68/03/31	0130	0555	6.3 - 275.3	232.2 - 295.3			39.6 - 60.7	240.0 - 245.0		
							148.4 - 166.5	265.6 - 269.8		
							230.0 - 260.2	284.7 - 291.8		
68/04/02	0240	0535	345.7 - 95.5	289.4 - 316.1						
	0545	0535	101.6 - 131.8	315.5 - 322.5						
	0550	0550	140.9 - 213.4	324.6 - 341.5						
68/04/04	0310	0420	305.0 - 351.3	340.5 - 9.7						
68/04/05	0610	0800	208.3 - 274.8	269.3 - 285.0						
68/04/06	0240	0500	231.9 - 316.5	23.0 - 42.6						
	0615	0600	1.9 - 65.4	53.1 - 67.9						
68/04/07	0330	0755	52.7 - 212.9	233.9 - 271.5						
68/04/08	0200	0300	145.8 - 185.1	64.0 - 72.5						
	0330	0400	203.2 - 221.3	76.7 - 80.9						
	0610	0600	295.9 - 312.0	59.3 - 102.1						
	0640	0700	318.0 - 330.1	103.5 - 106.3						
68/04/09	0235	0420	320.5 - 23.9	273.4 - 288.2						
	0440	0750	36.0 - 150.9	291.0 - 317.8						
68/04/11	0300	0330	276.6 - 294.7	323.8 - 328.0						
	0400	0415	312.9 - 321.9	332.2 - 334.3						
	0425	0520	328.0 - 1.2	335.7 - 343.4						
68/04/12	0320	0500	79.2 - 139.7	169.6 - 183.9						
	0525	0740	154.8 - 236.4	187.4 - 206.7						
68/04/14	0130	0455	313.7 - 77.7	201.4 - 230.5						
68/04/16	0235	0345	294.0 - 336.3	257.9 - 267.8						
68/04/17	0445	0625	163.1 - 223.5	118.8 - 133.0						

DATE		TIME(UT)		OBSERVATIONS		GCCOARD SPACE FLIGHT CENTER		ACTIVITY		IO PHASE	
YY/MM/DD	HHMM	HHMM	HHMM	CML III	IO PHASE	HHMM - HHMM	HHMM - HHMM	CML III	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM
68/04/19	C330	-	C625	58.7 - 128.2	155.4 - 171.8						
68/04/23	C200	-	C415	246.2 - 327.8	237.2 - 256.4						
	C440	-	C500	342.9 - 355.0	259.9 - 262.7						
	C525	-	C615	10.1 - 40.4	260.3 - 273.3						
	C645	-	C700	58.5 - 67.6	277.6 - 279.7						
68/04/24	C450	-	C700	139.5 - 218.0	123.9 - 122.3						
68/04/26	C515	-	C650	95.5 - 152.9	154.6 - 168.1						
68/04/27	C245	-	C645	155.3 - 300.3	337.2 - 10.8			249.0 - 285.2	0520 - 0620	-1.1 - 7.3	
68/04/29	C300	-	C640	105.2 - 238.2	23.5 - 56.7						
68/04/30	C000	-	C050	146.9 - 177.1	204.3 - 211.4						
	C310	-	C320	261.7 - 267.8	231.3 - 232.7			261.7 - 267.8	0310 - 0320	231.3 - 232.7	
	C340	-	C355	279.9 - 288.9	235.6 - 237.7			279.9 - 288.9	0340 - 0355	235.6 - 237.7	
	C420	-	C635	304.0 - 25.6	241.3 - 260.4			313.1 - 16.6	0435 - 0620	243.4 - 258.2	
68/11/05	1100	-	1150	160.9 - 191.2	202.9 - 209.9						
68/11/06	C800	-	1045	202.5 - 302.3	21.1 - 44.5			250.9 - 250.2	0920 - 1025	32.5 - 41.7	
68/11/07	C755	-	1100	349.9 - 101.8	223.2 - 249.2						
68/11/08	C750	-	1030	137.3 - 234.1	66.5 - 69.2			164.5 - 162.7	0835 - 0905	73.0 - 77.2	
68/11/09	C830	-	1115	311.9 - 51.7	274.7 - 298.0						
68/11/10	C745	-	C830	75.2 - 102.4	112.5 - 118.9						
	C845	-	1040	111.4 - 181.0	121.0 - 137.1						
	1110	-	1130	195.1 - 211.2	141.3 - 144.1						
68/11/11	C745	-	1040	225.6 - 331.4	315.1 - -20.0			258.9 - 280.0	0840 - 0915	-37.1 - -32.1	
68/11/12	C750	-	C815	19.1 - 34.2	159.6 - 163.1						

DATE VF/NM/ED	TIME(UT) HHMM - PPHM	16.0		GOLDCARD SPACE FLIGHT CENTER		ACTIVITY CML III	IO PHASE
		OBSERVATIONS CML III	IO PHASE	TIME(UT) HHMM - PPHM	IO PHASE		
68/11/12	C915 - 1000 1040 - 1105	70.4 - 97.6 121.8 - 136.9	171.5 - 177.8 183.4 - 186.9				
68/11/13	C740 - 1030	163.5 - 266.2	1.4 - 25.6				
68/12/03	C645 - 0825 C905 - 1250	255.4 - 319.9 344.0 - 120.0	101.0 - 115.1 120.7 - 152.2				
68/12/04	C645 - 0945 1010 - 1120	49.9 - 158.7 173.8 - 216.1	303.7 - -30.6 -27.1 - -17.1				
68/12/05	C640 - 1130	157.4 - 12.7	146.8 - 187.4				
68/12/06	C640 - 0830 C845 - 1120	347.8 - 54.3 63.4 - 157.1	-9.8 - 5.8 8.0 - 30.0				
68/12/07	C835 - 1120 1145 - 1215	135.3 - 307.6 322.7 - 340.8	152.4 - 232.5 236.0 - 240.3				
68/12/08	C630 - 1100	282.8 - 86.0	35.8 - 74.0	0745 - 0810	328.1 - 343.2	46.5 - 50.0	
68/12/09	C830 - 1035 1050 - 1130	73.3 - 221.4 230.5 - 254.6	238.3 - 273.0 275.1 - 280.8				
68/12/10	C630 - 1130	223.8 - 45.1	62.6 - 124.8				
68/12/11	C625 - 1120	11.3 - 189.6	284.5 - -33.5				
68/12/12	C625 - 1150	161.8 - 358.2	128.4 - 174.0	0900 - 0930	285.5 - 273.6	150.1 - 154.4	
68/12/13	C620 - 0835 C645 - 1005	309.3 - 30.9 36.9 - 85.3	-29.0 - -9.8 -8.4 - 3.0				
68/12/17	C640 - 1030	276.0 - 342.5	64.7 - 100.2				
68/12/18	C635 - 1050	314.7 - 145.1	261.2 - 305.9				
68/12/19	C635 - 1050	105.2 - 295.6	105.3 - 149.5				

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	16.7 GCCARC SPACE FLIGHT CENTER		ACTIVITY CML III	IO PHASE
		OBSERVATIONS CML III	TIME(UT) HHMM - HHMM		
68/12/20	0530 - 1040	252.7 - 80.1	307.6 - -8.3		
68/12/21	0530 - 1135	43.2 - 253.9	151.1 - 202.3		
68/12/22	0705 - 0830	251.2 - 302.6	8.3 - 20.4		
	0910 - 1020	326.8 - 9.1	26.1 - 36.0		
	1040 - 1110	21.2 - 39.3	38.8 - 43.0		
68/12/23	0520 - 0810	338.2 - 81.0	156.2 - 220.1		
	0925 - 1105	126.4 - 196.8	230.7 - 244.8		
68/12/24	0520 - 1120	126.8 - 346.4	40.4 - 51.2		
68/12/25	0515 - 1150	276.3 - 155.1	242.2 - 298.3	0625 - 0715	318.6 - 348.9
					252.1 - 259.2
68/12/26	0520 - 0645	69.9 - 121.3	87.2 - 59.1		
	0725 - 1215	145.4 - 320.8	104.8 - 145.4		
68/12/27	0510 - 1135	214.4 - 57.1	288.6 - -16.6		
68/12/28	0505 - 1220	1.9 - 264.9	131.6 - 192.6		
68/12/29	0505 - 1205	152.5 - 46.4	-24.8 - 34.8		
68/12/30	0505 - 0810	303.0 - 54.9	178.1 - 204.1		
	0830 - 0845	67.0 - 76.0	207.0 - 209.1		
	0915 - 1150	94.2 - 187.9	213.3 - 235.2		
68/12/31	0500 - 0635	90.6 - 148.0	21.6 - 35.1		
	0650 - 1150	157.1 - 338.4	37.2 - 79.5		
69/01/01	0455 - 1150	236.1 - 129.0	223.5 - 282.3	0550 - 0900	271.4 - 26.2
					231.2 - 258.2
69/01/02	0450 - 1220	25.6 - 297.7	67.1 - 130.3	0650 - 0905	98.2 - 179.8
					84.0 - 102.9
69/01/03	0450 - 1155	176.2 - 73.2	269.8 - -25.7	0615 - 0635	227.6 - 239.7
				0850 - 0905	321.3 - 330.4
					281.9 - 284.7
					304.0 - 306.1

DATE VS/MN/CD	TIME(UT) HHMM - HHMM	OBSERVATIONS		16.7 GCLDARD SPACE FLIGHT CENTER		ACTIVITY CML III	IO PHASE
		CML III	IC PHASE	TIME(UT) HHMM - HHMM			
68/01/04	C445 - C800 0820 - 1140	323.8 - 81.7 93.7 - 214.7	113.0 - 140.4 143.2 - 171.2				
68/01/05	C440 - C800 C820 - C840 C850 - 1205	111.3 - 232.2 244.3 - 250.4 262.5 - 20.3	-44.3 - -15.9 -13.0 - -10.2 -8.7 - 18.9	1040 - 1055	329.0 - 338.0	6.9 - 9.0	
68/01/06	C440 - 1150	261.9 - 161.9	158.9 - 219.4				
68/01/07	0440 - 1215	52.5 - 327.6	2.9 - 67.3				
68/01/08	C605 - 1150	327.0 - 103.0	234.5 - 266.5	0805 - 0940 0950 - 1025	327.0 - 24.4 30.5 - 51.6	234.5 - 248.7 249.4 - 254.4	
68/01/09	C930 - 1200	165.0 - 259.7	50.8 - 111.8	0930 - 1005	169.0 - 190.1	90.8 - 95.7	
68/01/11	0425 - 1140	265.8 - 188.7	54.6 - 155.6				
68/01/12	C425 - C840 C900 - 1220	76.3 - 230.5 242.6 - 3.5	297.7 - -25.9 -23.1 - 5.3				
68/01/14	C420 - 1130	14.5 - 274.5	-15.6 - 45.3				
68/01/15	C415 - C640 0730 - 1150	162.1 - 245.8 290.0 - 77.2	156.4 - 206.9 213.9 - 250.8	1100 - 1145	47.0 - 74.2	243.7 - 250.1	
68/01/16	C415 - 1200	312.7 - 233.8	30.8 - 96.3	0850 - 1135	119.0 - 218.7	69.6 - 92.8	
68/01/17	0410 - C820 0845 - 1155	100.3 - 251.4 266.6 - 21.4	232.7 - 268.2 271.5 - 298.8				
68/01/18	0410 - 1200	250.9 - 175.1	77.0 - 142.9	0740 - 0800	17.9 - 30.0	106.4 - 109.2	
68/01/19	0405 - 1150	38.5 - 319.6	279.2 - -14.5				
68/01/20	C400 - C740 C750 - 1155	186.1 - 319.1 325.1 - 113.3	122.2 - 153.0 154.4 - 188.9				

DATE		TIME(UT)	OBSERVATIONS		16.7 GOCCARC SPACE FLIGHT CENTER		ACTIVITY		IO PHASE	
YY/MM/DD	HHMM	HHMM - HHMM	CML III	IC PHASE	TIME(UT)	HHMM - HHMM	CML III			
69/01/22	0325	0325 - 0925	106.2 - 323.8	163.9 - 214.7						
69/01/23	0620	0620 - 1200	2.6 - 208.2	33.0 - 60.9						
69/01/24	0620	0620 - 0750	153.2 - 207.6	235.6 - 248.4						
	0630	0630 - 1145	231.8 - 349.7	254.1 - 281.9	0835 - 0940	234.9 - 274.2	254.8 - 264.1			
					1055 - 1140	319.5 - 346.7	274.7 - 281.2			
69/01/25	0615	0615 - 1215	300.8 - 155.5	79.2 - 129.6	0915 - 0940	49.7 - 64.8	104.4 - 107.9			
69/01/26	0610	0610 - 1135	85.4 - 284.9	281.6 - -32.1						
69/01/27	0605	0605 - 1205	236.1 - 93.7	124.4 - 175.0						
69/01/28	0800	0800 - 1020	56.2 - 180.9	-15.3 - 4.5						
69/01/29	0600	0600 - 1200	174.3 - 32.0	170.5 - 221.3						
69/01/30	0555	0555 - 1125	321.9 - 161.5	14.2 - 63.7	1045 - 1100	137.3 - 146.3	55.1 - 57.2			
69/01/31	0550	0550 - 1150	109.6 - 327.2	216.1 - 267.2	0905 - 1020	227.5 - 272.8	243.7 - 254.4			
69/02/01	0545	0545 - 0930	257.2 - 33.2	59.7 - 51.3	0745 - 0830	329.7 - 356.9	76.6 - 82.9			
	0545	0545 - 1145	42.3 - 114.8	53.4 - 110.2	1025 - 1050	66.5 - 81.6	99.0 - 102.5			
69/02/02	0540	0540 - 1140	44.8 - 262.5	262.0 - -46.7						
69/02/03	0535	0535 - 1135	192.4 - 50.1	105.1 - 155.6	0925 - 1015	331.5 - 1.7	137.3 - 144.3			
69/02/04	0530	0530 - 1130	340.1 - 197.7	308.0 - -0.8						
69/02/05	0530	0530 - 1130	150.7 - 348.4	151.1 - 201.8	0820 - 0855	233.5 - 254.7	175.0 - 180.0			
					0940 - 1005	281.9 - 297.0	166.3 - 189.8			
69/02/06	0525	0525 - 1125	278.4 - 136.0	-5.3 - 45.6	0625 - 0715	314.6 - 344.9	3.2 - 10.3			
69/02/07	0520	0520 - 1110	66.0 - 277.6	156.7 - 246.3	0920 - 1005	211.1 - 238.3	230.7 - 237.1			
69/02/08	0520	0520 - 1100	216.7 - 62.2	41.1 - 88.9						

DATE		TIME(UT)	OBSERVATIONS	16.7 GGCARD SPACE FLIGHT CENTER		ACTIVITY	IO PHASE
VR/MM/DD	TIME(UT)	HHMM - HHMM	CML III	IC PHASE	TIME(UT)	CML III	
	HHMM - HHMM				HHMM - HHMM		
69/02/09	C630 - 1115		45.6 - 222.0	253.9 - 294.5			
69/02/10	0505 - 1110		148.9 - 9.6	85.9 - 137.0	0530 - 0610	164.0 - 188.2	29.4 - 95.0
69/02/12	C205 - 0715		341.4 - 168.9	107.4 - 150.9			
	C735 - 1145		181.0 - 332.1	153.7 - 188.9			
69/02/13	0415 - 1135		210.7 - 116.7	-30.3 - 32.0			
69/02/14	C340 - 1120		340.2 - 258.3	167.5 - 232.7			
69/02/15	C400 - 1120		143.0 - 49.0	14.9 - 76.8	0435 - 0505	164.1 - 182.3	19.8 - 24.1
69/02/16	0415 - 0455		302.7 - 326.9	219.7 - 225.4			
	C505 - 0650		333.0 - 36.4	226.8 - 241.7	0505 - 0620	333.0 - 18.3	226.8 - 237.4
	C750 - 1030		72.7 - 169.5	250.3 - 273.1			
	1125 - 1150		202.7 - 217.8	280.9 - 284.5			
69/02/17	0415 - 1135		53.4 - 359.4	64.0 - 125.7	0540 - 0715	144.8 - 202.2	75.9 - 89.2
					0810 - 0900	235.5 - 265.7	56.9 - 103.9
					1010 - 1025	308.1 - 317.1	113.8 - 115.9
69/02/18	C415 - 1115		244.1 - 138.0	267.2 - -33.0	0430 - 0505	253.2 - 274.3	269.3 - 274.3
69/02/19	C330 - 0730		7.6 - 152.7	104.4 - 138.1	0335 - 0420	10.6 - 37.8	105.2 - 111.5
	C740 - 1120		158.7 - 291.7	139.5 - 170.5	0900 - 0925	207.1 - 222.2	150.8 - 154.3
					1025 - 1105	288.5 - 282.7	142.7 - 168.4
69/02/20	C425 - 1045		191.5 - 61.3	-43.8 - 10.1			
69/02/21	0500 - 1120		3.3 - 233.1	164.0 - 217.7			
69/02/22	C500 - 0940		154.0 - 323.3	8.5 - 48.0			
69/02/23	0550 - 0900		334.9 - 89.8	214.3 - 245.3	0605 - 0630	344.0 - 359.1	220.4 - 224.0
69/02/24	C625 - 0525		110.5 - 128.7	59.0 - 63.2			
	C615 - 0710		140.7 - 174.0	60.0 - 73.8			

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	16.7 GDCARD SPACE FLIGHT CENTER		OBSERVATIONS CML III	IC PHASE	TIME(UT) HHMM - HHMM	ACTIVITY CML III	IO PHASE
		OBSERVATIONS CML III	IC PHASE					
69/02/24	C72C - C820 0845 - 1020	180.0 - 216.3 231.4 - 288.9	75.2 - 83.6 87.1 - 100.4			1000 - 1020	276.8 - 288.9	97.6 - 100.4
69/02/25	C60C - 1020	282.4 - 75.6	267.2 - 304.3			0605 - 0645	285.4 - 309.6	267.9 - 273.6
69/02/26	C41E - C735 C75C - 1000 1030 - 1105	9.6 - 130.5 139.6 - 218.2 236.3 - 257.5	96.0 - 124.1 125.2 - 144.5 148.7 - 153.6					
69/02/27	C61C - C650 073C - 1005	229.8 - 254.0 278.2 - 11.9	-43.8 - -38.1 -32.4 - -10.4			0815 - 0500	305.4 - 332.6	-26.0 - -19.6
69/02/28	C65E - C750 080C - C900 092C - 1020	47.7 - 80.9 87.0 - 123.3 135.4 - 171.6	165.4 - 173.2 174.6 - 183.1 185.9 - 194.4					
69/03/01	C605 - C505 C53E - 1035	168.1 - 277.0 295.1 - 331.4	2.9 - 28.3 32.5 - 41.0			0825 - 0645	252.8 - 264.9	22.7 - 25.5
69/03/02	075E - 1100	25.3 - 137.2	221.2 - 247.6					
69/03/03	C74C - 1040	167.0 - 275.8	63.3 - 68.6					
69/03/04	C450 - C900 C92E - 1015	214.9 - 6.0 21.1 - 51.4	242.4 - 278.1 281.6 - 288.8			0505 - 0620	223.9 - 269.3	244.6 - 255.3
69/03/05	C60C - C820 064E - 1050	47.9 - 132.5 147.7 - 205.1	96.1 - 115.8 119.3 - 132.6			0705 - 0730	87.2 - 102.3	105.2 - 108.7
69/03/06	C44E - C515 0540 - 1105	153.2 - 316.5 331.6 - 23.0	289.3 - -32.2 -24.7 - -16.6					
69/03/07	C90C - 1110	58.1 - 176.7	168.4 - 166.8					
69/03/08	C5EC - C730 075C - 1100	133.9 - 194.4 206.5 - 321.4	-13.9 - 0.2 3.1 - 29.8					

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	GCDARC SPACE FLIGHT CENTER		ACTIVITY CML III	IO PHASE
			IC PHASE	TIME(UT) HHMM - HHMM		
69/03/09	C50C - C71C	254.4 - 333.0	181.7 - 200.1			
	C73C - 11C0	345.1 - 112.0	202.9 - 232.8			
	C63C - C7C0	63.2 - 117.6	30.4 - 43.1			
	C74C - C83C	144.8 - 175.1	49.4 - 56.4			
69/03/10	C63C - 11C0	206.3 - 262.7	64.1 - 76.8			
	C540 - C6C0	219.9 - 232.0	234.8 - 237.7	0540 - 0600	219.9 - 232.0	234.8 - 237.7
69/03/11	C650 - C510	262.3 - 346.9	244.5 - 264.7	0650 - 0725 0840 - 0910	262.3 - 283.4 328.8 - 346.9	244.8 - 249.8 260.5 - 264.7
	0800 - 1100	95.3 - 204.1	58.4 - 123.6	0825 - 0910 1025 - 1045	110.4 - 137.6 183.0 - 155.0	101.9 - 108.2 118.7 - 121.5
69/03/13	C33C - C640	85.7 - 197.6	264.6 - 291.0			
	C70C - 1045	205.7 - 345.7	253.8 - 34.2			
69/03/14	C50C - 1050	287.8 - 139.4	120.0 - 169.3			
69/03/15	C51C - C640	24.6 - 211.5	-34.3 - -4.5			
	0855 - 1045	220.6 - 287.1	-2.4 - 13.1			
69/03/16	C51C - 1045	235.2 - 77.8	168.4 - 215.9			
69/03/17	C55C - C725	53.1 - 107.6	19.3 - 32.0			
	C93C - 1115	186.2 - 246.6	50.3 - 64.3			
69/03/18	C630 - 1035	225.0 - 13.1	227.2 - 262.1	0655 - 1020	240.1 - 4.1	230.8 - 260.0
69/03/19	C61C - C555	3.6 - 139.6	68.4 - 59.9	0905 - 0955	109.4 - 139.6	92.9 - 99.9
69/03/20	0800 - 1100	220.8 - 329.6	287.7 - 313.3			
69/03/21	C24C - C5C0	181.0 - 262.6	86.5 - 105.4			
	0550 - C820	292.8 - 23.5	112.4 - 133.5	0615 - 0630	308.0 - 317.0	115.9 - 118.1
69/03/22	0730 - 1100	144.0 - 271.0	-29.1 - 0.6			

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	16.7		GODDARD SPACE FLIGHT CENTER		ACTIVITY CML III	IO PHASE
		OBSERVATIONS CML III	IC PHASE	TIME(UT) HHMM - HHMM	CML III		
69/03/23	C615 - C745 0900 - 1020	249.3 - 303.7 349.1 - 37.5	163.0 - 175.7 186.4 - 197.7				
69/03/24	C220 - C530 C455 - C620 0900 - 1000 1025 - 1200	257.9 - 12.8 64.2 - 115.6 135.8 - 176.0 191.2 - 248.6	-25.7 - 1.2 13.2 - 25.2 30.8 - 39.2 42.7 - 56.1	0230 - 0350	263.9 - 312.3	-24.3 - -12.9	
69/03/25	Q115 - C235 0500 - C535 C900 - 1100	5.3 - 93.9 145.3 - 166.5 290.4 - 3.0	167.8 - 187.6 159.7 - 204.7 233.9 - 251.0	0900 - 0910 0925 - 1050	290.4 - 296.5 305.5 - 356.9	233.9 - 235.3 237.4 - 249.5	
69/03/26	C535 - 1020	317.2 - 129.5	48.3 - 68.9	0935 - 1020	102.3 - 129.5	82.6 - 88.9	
69/03/29	C710 - C635 0530 - 1005	106.6 - 158.0 191.2 - 212.4	313.4 - -34.6 -26.8 - -21.8				
69/03/30	C440 - C635 C735 - 1000	166.6 - 236.1 272.4 - 0.0	135.0 - 151.2 159.6 - 180.2				
69/03/31	C255 - C415 C505 - 1025	253.7 - 302.1 117.5 - 165.8	-35.4 - -24.1 16.9 - 28.1				
69/04/02	0850 - 1025	49.7 - 107.1	61.7 - 75.0				
69/04/04	C505 - 1045	0.1 - 60.5	110.6 - 144.7				
69/04/05	0725 - C525 1010 - 1110	90.3 - 168.9 190.0 - 226.3	300.8 - -40.8 -35.8 - -27.3				
69/04/10	C325 - 1000	338.4 - 217.2	204.1 - 260.4	0750 - 0910	138.6 - 186.9	241.9 - 253.3	
69/04/11	C800 - 1000	255.3 - 7.8	86.8 - 103.6				
69/04/12	0305 - C445	267.5 - 328.0	248.9 - 263.1	0305 - 0325	267.5 - 279.6	248.9 - 251.7	

DATE		TIME(UT)		OBSERVATIONS		16.7 GODDARD SPACE FLIGHT CENTER		ACTIVITY		IO PHASE	
YR/MM/DD		HHMM - HHMM		CML III		IO PHASE		CML III		IO PHASE	
65/04/12	0505 - 0740	340.1 - 73.8	266.0 - 288.0	0505 - 0515	340.1 - 346.1	266.0 - 267.4	0545 - 0615	4.3 - 46.6	271.7 - 281.6		
	0640 - 0945	110.1 - 149.4	256.6 - 305.8								
65/04/13	0320 - 0445	67.2 - 118.6	94.3 - 106.3								
	0515 - 0600	136.8 - 164.0	110.5 - 116.8								
	0625 - 0905	179.1 - 275.8	120.3 - 142.9								
65/04/14	0305 - 0410	208.8 - 246.1	256.4 - 305.6								
	0550 - 0545	302.5 - 90.6	-40.2 - -7.0								
65/04/20	0715 - 0910	183.6 - 253.1	112.5 - 128.7								
65/04/25	0730 - 0835	225.6 - 264.9	52.9 - 42.0								
65/04/26	0830 - 0730	303.6 - 16.2	239.4 - 256.5								
65/04/28	0315 - 0850	163.2 - 5.7	267.7 - 315.3								
65/04/29	0235 - 0655	289.5 - 86.7	105.0 - 141.6								
	0705 - 0840	92.8 - 150.2	143.0 - 156.5								
65/05/01	0445 - 0835	21.8 - 88.3	187.4 - 203.1								
65/05/06	0630 - 0805	45.5 - 102.9	122.9 - 136.3								
65/05/08	0230 - 0415	201.5 - 264.9	136.0 - 150.8								
65/05/10	0230 - 0500	142.5 - 233.2	181.2 - 204.5								
65/05/11	0305 - 0700	314.2 - 56.3	32.1 - 65.0								
65/05/14	0310 - 0405	46.8 - 82.0	283.6 - 291.4								
	0500 - 0625	115.2 - 166.6	259.2 - 311.2								
	0655 - 0730	184.8 - 205.9	315.5 - -39.6								
65/05/15	2135 - 2300	147.2 - 158.6	283.3 - 295.3								

DATE		TIME(UT)	OBSERVATIONS		GODDARD SPACE FLIGHT CENTER		ACTIVITY	IO PHASE
YY/MM/DD	HHMM - HHMM		CML III	IC PHASE	TIME(UT)	HHMM - HHMM	CML III	
68/05/15	2330 - 2400		216.8 - 234.9	259.6 - 303.8				
68/05/16	C110 - C145		277.2 - 258.4	313.7 - 318.7				
	C510 - C520		62.3 - 86.5	-12.4 - -6.8				
68/05/17	C215 - C740		107.0 - 303.5	165.5 - 211.8	0540 - 0620		230.9 - 255.1	194.7 - 200.4
68/05/18	C100 - C145		212.2 - 239.4	-0.8 - 5.5				
	C300 - C720		284.7 - 87.9	16.0 - 53.8				
68/05/19	0000 - 0145		326.4 - 29.9	153.6 - 208.6				
68/05/22	0205 - C300		133.4 - 166.6	101.5 - 109.3	0205 - 0300		133.4 - 166.6	101.5 - 109.3
	C400 - 0425		202.9 - 218.0	117.7 - 121.2				
68/05/31	C505 - C625		156.4 - 204.7	158.1 - 169.5	0530 - 0625		171.5 - 204.7	161.7 - 169.5
68/06/04	C535 - C615		56.3 - 80.4	256.9 - 262.6				

16.7 CLARK LAKE RADIC OBSERVATORY				ACTIVITY		IO PHASE
DATE	TIME(UT)	OBSERVATIONS	IC PHASE	TIME(UT)	CML III	
YY/MM/DD	HHMM - HHMM	CML III		HHMM - HHMM		
66/12/16	0730 - 1050	261.2 - 22.1	222.6 - 251.1	0915 - 1050	324.7 - 22.1	237.5 - 251.1
	1100 - 1230	28.2 - 118.9	252.5 - 273.8			
66/12/17	0725 - 1225	48.9 - 266.5	65.1 - 115.8	0805 - 0840	73.0 - 94.2	70.7 - 75.6
				0940 - 1155	130.5 - 212.1	84.0 - 103.1
66/12/18	0720 - 1220	156.5 - 54.2	266.6 - 319.6	0905 - 0955	260.0 - 290.2	283.5 - 290.6
				1020 - 1115	305.3 - 338.6	294.2 - 301.9
				1125 - 1155	344.6 - 2.8	303.3 - 307.6
66/12/19	0715 - 1215	344.2 - 201.8	110.6 - 161.7			
	0715 - 1215	134.8 - 352.5	215.2 - 5.8			
66/12/21	0710 - 1300	282.5 - 134.1	157.2 - 207.1			
	0705 - 1220	76.2 - 303.0	0.7 - 54.7	1125 - 1220	227.4 - 260.6	37.1 - 44.8
66/12/23	0700 - 0855	217.8 - 237.4	203.4 - 219.8	1235 - 1330	269.7 - 303.0	46.9 - 54.7
	0530 - 1200	308.5 - 75.5	224.7 - 254.6	0750 - 0955	246.1 - 257.4	210.5 - 219.8
				0940 - 1125	314.6 - 18.1	226.2 - 241.1
66/12/24	0655 - 1255	5.5 - 223.2	46.1 - 56.7	1135 - 1215	24.1 - 48.3	242.5 - 248.2
	0650 - 1250	153.2 - 10.8	249.5 - 300.5	0930 - 1205	99.2 - 192.9	67.8 - 89.7
67/01/14	0525 - 1125	235.6 - 93.3	349.7 - 40.2			
	0525 - 0805	26.3 - 123.0	193.2 - 216.0	0530 - 0705	238.6 - 296.1	350.4 - 3.7
67/01/15	0520 - 1120	132.1 - 244.0	218.1 - 244.4	0750 - 0825	323.3 - 344.4	10.0 - 14.9
	0515 - 1115	170.9 - 28.6	35.1 - 65.8	1025 - 1105	207.7 - 231.9	235.9 - 241.6
67/01/16				0655 - 0715	231.4 - 243.5	49.2 - 52.0
				0750 - 0830	264.7 - 288.8	56.9 - 62.5
				0900 - 0915	307.0 - 316.1	66.8 - 68.9
				0935 - 1105	328.1 - 22.6	71.7 - 84.4
67/01/17	0520 - 1115	324.6 - 179.3	240.1 - 290.4	0520 - 0525	324.6 - 327.7	240.1 - 240.8
				0535 - 0700	333.7 - 25.1	242.2 - 254.3
67/01/18	0545 - 0840	130.5 - 236.3	66.4 - 111.1	0550 - 0725	133.5 - 150.9	87.1 - 100.5

16.7 CLARK LAKE R/DIC OBSERVATORY				OBSERVATIONS		10 PHASE		TIME (UT)		ACTIVITY		10 PHASE	
DATE	TIME (LT)	HHMM - HHMM	CML III	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM
67/01/18	0525 - 1110	263.5 - 327.0	117.5 - 132.4	0440 - 0740	275.2 - 24.1	219.7 - 245.3	0755 - 0815	33.1 - 45.2	247.4 - 250.3				
67/01/19	0600 - 0755	290.2 - 359.7	253.1 - 309.3	0610 - 0630	271.0 - 283.1	279.9 - 282.7	0750 - 0825	331.5 - 352.6	294.0 - 298.9				
67/01/24	0440 - 1040	275.2 - 132.9	219.7 - 270.8	0650 - 0810	144.5 - 192.9	81.0 - 92.3							
67/01/25	0435 - 1035	62.9 - 280.5	61.9 - 112.8	0825 - 0855	143.3 - 161.4	141.8 - 146.1							
67/01/26	0505 - 1030	231.7 - 65.2	270.7 - 316.5	0645 - 0815	233.5 - 287.9	331.8 - 344.5							
67/01/27	0430 - 1030	1.2 - 218.9	108.4 - 159.6	0850 - 0945	250.4 - 283.6	36.2 - 43.9							
67/01/28	0325 - 1025	112.6 - 6.5	303.7 - 2.7	0635 - 0735	319.4 - 355.7	221.3 - 229.9	0900 - 0925	47.1 - 62.2	242.0 - 245.5				
67/01/29	0420 - 1020	256.5 - 154.1	154.5 - 205.8										
67/01/30	0405 - 1005	78.1 - 295.7	356.2 - 46.8										
67/01/31	0400 - 1000	225.7 - 83.4	199.3 - 250.5										
67/02/01	0355 - 1000	13.3 - 234.0	41.7 - 93.2										
67/02/02	0510 - 0955	205.3 - 21.7	256.7 - 257.0	0545 - 0600	230.5 - 239.6	261.7 - 263.8	0640 - 0720	263.8 - 287.9	269.4 - 275.1				
				0815 - 0835	321.2 - 333.3	282.9 - 285.7							
67/02/03	0505 - 0955	357.0 - 172.3	58.7 - 139.9	0600 - 0630	30.2 - 48.4	106.5 - 110.7							
67/02/04	0530 - 0950	102.3 - 319.9	292.6 - 343.2										
67/02/05	0340 - 0945	246.9 - 107.6	134.0 - 186.0	0340 - 0500	246.9 - 295.2	134.0 - 145.4							
67/02/06	0500 - 0945	85.9 - 258.2	349.3 - 29.3										
67/02/07	0340 - 0940	188.1 - 45.8	181.6 - 232.9	0505 - 0740	239.5 - 333.3	133.7 - 215.8							
67/02/08	0330 - 0400	332.7 - 350.9	23.5 - 27.7										

CLARK LAKE RADIO OBSERVATORY									
16-7		OBSERVATIONS		IO PHASE		ACTIVITY		IO PHASE	
DATE		TIME(UT)		TIME(UT)		CML III		CML III	
YY/MM/DD	HHMM - HHMM	CML III	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM
67/02/08	C420 - C440	3.0 - 15.1	30.5 - 33.4						
	C455 - C535	24.1 - 193.4	35.5 - 74.9						
	C325 - C925	120.3 - 338.0	227.0 - 278.0	0435 - 0455	162.7 - 174.8	237.0 - 279.8			
67/02/10	C320 - C920	268.0 - 125.6	69.1 - 120.1	0340 - 0400	280.0 - 292.1	71.9 - 74.7			
				0400 - 0450	298.2 - 322.4	76.1 - 81.8			
				0740 - 0810	65.1 - 83.3	105.9 - 110.1			
67/02/11	C320 - C455	58.6 - 116.0	273.6 - 287.0						
	C525 - 1010	134.2 - 306.5	291.2 - 331.3	0840 - 1010	252.1 - 306.5	318.7 - 331.3			
67/02/12	C315 - C455	206.2 - 266.6	115.6 - 159.8	0400 - 0455	233.4 - 266.6	122.0 - 129.8			
	C540 - C915	293.8 - 63.8	136.2 - 166.9	0540 - 0625	293.8 - 321.1	136.2 - 142.6			
67/02/13	C305 - C505	350.7 - 208.4	318.5 - 9.0						
67/02/14	C305 - C505	141.4 - 359.0	161.7 - 213.0	0605 - 0725	250.2 - 298.6	187.4 - 198.8			
				0755 - 0810	316.7 - 325.8	203.0 - 205.2			
				0835 - 0845	340.9 - 346.9	208.7 - 210.2			
67/02/15	C350 - C500	315.2 - 146.6	11.6 - 55.1						
67/02/16	C220 - C255	356.6 - 17.7	250.2 - 245.2	0220 - 0245	356.6 - 11.7	250.2 - 253.8			
	C310 - C545	26.8 - 265.6	257.3 - 312.9	0840 - 0945	226.3 - 265.6	303.8 - 312.9			
67/02/19	C245 - C430	162.3 - 225.8	56.4 - 111.3						
	C450 - C510	237.9 - 250.0	114.1 - 117.0						
	C610 - C645	266.2 - 19.9	125.5 - 147.6						
67/02/20	C320 - C540	334.0 - 167.5	305.7 - 350.6						
67/02/21	C325 - C455	127.7 - 182.1	145.5 - 162.3						
	C540 - C635	209.3 - 315.1	168.8 - 193.7						
67/02/22	C230 - C245	245.0 - 254.1	345.5 - 347.6						

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS		CLARK LAKE RADIC OBSERVATORY		ACTIVITY CWL III	IO PHASE
		CWL III	IC PHASE	TIME(UT) HHMM - HHMM	CWL III		
67/02/22	C255 - C305	260.1 - 266.1	349.0 - 350.4	0425 - 0510	314.5 - 341.7	1.6 - 7.9	
	C320 - C830	275.2 - 102.6	352.5 - 36.0				
67/02/23	C335 - C400	74.9 - 90.0	198.5 - 202.0	0730 - 0900	216.9 - 271.3	231.9 - 244.6	
	C415 - C440	99.0 - 114.2	204.2 - 207.7				
	C625 - C900	177.6 - 271.3	222.6 - 244.6				
67/02/24	C225 - C305	183.1 - 207.3	31.5 - 37.1	0400 - 0415	240.6 - 249.6	44.9 - 47.0	
	C320 - C340	216.4 - 228.5	39.3 - 42.1				
	C400 - C440	240.6 - 264.7	44.9 - 50.5				
67/03/02	C515 - C820	285.9 - 37.7	55.4 - 61.6	0515 - 0525	285.9 - 291.9	55.4 - 56.9	
67/03/03	C425 - C455	79.0 - 97.2	150.4 - 194.6				
	C600 - C755	136.5 - 206.0	203.9 - 220.2				
67/03/04	C305 - C340	181.2 - 202.4	22.0 - 36.9				
	C400 - C410	214.5 - 220.5	29.8 - 31.2				
	C420 - C440	226.6 - 238.7	32.6 - 35.4				
67/03/05	C610 - C750	293.1 - 353.5	48.1 - 62.2	0525 - 0535	206.9 - 213.0	88.8 - 90.2	
	C540 - C745	65.5 - 141.0	248.3 - 265.9				
	C230 - C245	101.1 - 110.2	64.0 - 66.1				
67/03/06	C430 - C455	173.7 - 188.8	81.0 - 84.5	0555 - 0615	225.1 - 237.2	93.0 - 95.8	
	C515 - C535	200.9 - 213.0	87.3 - 90.2				
67/03/07	C555 - C615	225.1 - 237.2	93.0 - 95.8	0630 - 0720	246.2 - 276.5	98.0 - 105.1	
	C630 - C745	246.2 - 291.6	98.0 - 108.6				
67/03/08	C600 - C740	18.6 - 79.1	258.0 - 312.0				
	C240 - C310	48.3 - 66.4	112.6 - 116.9				
	C560 - C735	157.1 - 226.6	138.2 - 154.6				
67/03/09	C445 - C455	274.3 - 280.4	334.1 - 335.5				

DATE YY/MM/DD	TIME(LT) HHMM - HHMM	16.7 CLARK LAKE RADIC OBSERVATORY		ACTIVITY CML III	IO PHASE
		OBSERVATIONS CML III	IC PHASE		
67/03/06	0640 - 0720	343.9 - 14.1	350.3 - 357.3		
67/03/06	0530 - 0725	92.1 - 161.6	184.2 - 200.6		
67/03/10	0430 - 0455	206.3 - 221.4	18.7 - 22.2		
	0645 - 0725	287.9 - 312.1	37.7 - 43.3		

16.7 KAUAI, HAWAII

DATE YY/MM/DD	TIME(UT)		OBSERVATIONS CWL III	IO PHASE		TIME(UT) HHMM - HHMM	ACTIVITY CWL III	IO PHASE
	HHMM - HHMM	HHMM - HHMM						
67/11/10	1410 - 1720		317.0 - 71.8	235.5 - 262.5		1425 - 1630	326.0 - 41.6	237.6 - 255.4
67/11/11	1220 - 1720		41.0 - 222.3	64.1 - 106.2		1400 - 1650	101.4 - 204.2	78.2 - 102.0
67/11/12	1305 - 1745		218.7 - 27.9	273.3 - 313.2		1315 - 1650	224.7 - 354.7	274.8 - 305.4
67/11/13	1305 - 1730		9.2 - 169.4	116.9 - 154.0				
67/11/14	1130 - 1625		102.3 - 280.6	307.0 - -11.1		1510 - 1625	235.3 - 280.6	338.3 - -11.1
	1715 - 1745		310.8 - 329.0	-4.0 - 0.3		1715 - 1745	310.8 - 329.0	-4.0 - 0.3
67/11/15	1230 - 1615		289.0 - 65.1	158.4 - 190.0		1320 - 1340	319.3 - 331.4	165.4 - 168.2
67/11/16	1120 - 1210		37.2 - 67.5	-7.3 - -0.2				
	1350 - 1620		127.9 - 218.6	13.9 - 35.1				
67/11/18	1420 - 1730		87.1 - 202.0	64.8 - 51.5		1605 - 1720	150.6 - 195.9	79.5 - 90.1
67/11/19	1415 - 1725		234.6 - 349.5	267.0 - 294.1				
67/11/20	1410 - 1700		22.1 - 124.9	109.9 - 133.7				
67/11/21	1410 - 1700		172.6 - 275.4	313.5 - 337.7				
67/11/22	1405 - 1630		320.1 - 47.8	155.6 - 176.0		1425 - 1440	332.2 - 341.3	152.4 - 160.6
						1530 - 1545	11.5 - 20.6	167.6 - 169.7
67/11/23	1120 - 1240		10.9 - 59.3	330.5 - -12.2				
	1300 - 1350		71.4 - 101.6	-9.3 - -2.2				
	1420 - 1645		119.7 - 207.4	4.0 - 22.5				
67/11/24	1205 - 1515		188.7 - 303.5	185.4 - 212.3				
67/11/25	1105 - 1725		302.9 - 172.7	21.3 - 74.7		1505 - 1725	88.0 - 172.7	55.1 - 74.7
67/11/26	1105 - 1210		93.5 - 132.8	223.9 - 233.1				
	1345 - 1655		190.2 - 305.1	246.6 - 273.6		1350 - 1505	193.2 - 238.6	247.3 - 258.0
						1630 - 1650	285.9 - 302.0	276.1 - 272.9

16.7 KAUAI, HAWAII

DATE YY/MM/CC	TIME(UT)		OBSERVATIONS CML III	IO PHASE	TIME(UT)		ACTIVITY CML III	IO PHASE
	HHMM	HHMM			HHMM	HHMM		
67/11/27	1045	1055	231.9 - 238.0	65.2 - 66.6	1120 - 1305	253.1 - 316.6	70.1 - 84.8	
	1110	1315	247.0 - 322.6	68.7 - 66.2				
	1330	1510	331.7 - 32.1	88.3 - 102.3				
	1525	1650	41.2 - 92.6	104.4 - 116.3				
67/11/28	1210	1245	73.9 - 95.0	280.3 - 285.3	1535 - 1610	47.2 - 68.4	105.8 - 110.7	
	1340	1625	128.3 - 228.0	253.1 - 316.6				
67/11/29	1045	1210	173.0 - 248.6	111.6 - 159.2	1115 - 1200 1210 - 1250	191.2 - 218.4 224.4 - 248.6	115.8 - 122.1 123.5 - 125.2	
	1335	1740	275.8 - 63.9	135.5 - 169.9				1335 - 1635
67/11/30	1205	1405	11.9 - 84.5	326.8 - -16.1	1505 - 1545	271.3 - 295.5	194.9 - 200.5	
	1430	1715	95.6 - 190.4	-12.6 - 10.8				
67/12/01	1130	1145	141.3 - 150.4	164.5 - 166.6	1505 - 1545	271.3 - 295.5	194.9 - 200.5	
	1215	1305	168.5 - 158.8	170.9 - 177.9				
	1415	1715	241.1 - 349.9	187.8 - 213.3				
	1305	1325	349.3 - 1.4	22.3 - 25.1				
67/12/02	1515	1520	67.9 - 77.0	40.6 - 42.7	1505 - 1545	271.3 - 295.5	194.9 - 200.5	
	1545	1725	86.1 - 146.5	44.8 - 58.9				
	1030	1225	46.2 - 121.8	202.9 - 220.7				
67/12/03	1255	1705	133.8 - 285.0	223.5 - 259.1	1435 - 1605 1625 - 1705	194.3 - 246.7 260.8 - 285.0	237.7 - 250.5 253.4 - 259.1	
	1020	1100	190.7 - 214.9	45.8 - 51.4				
67/12/04	1320	1715	299.5 - 81.6	71.1 - 104.0	1435 - 1605 1625 - 1705	194.3 - 246.7 260.8 - 285.0	237.7 - 250.5 253.4 - 259.1	
	1110	1245	11.5 - 68.9	255.8 - 269.3				
67/12/05	1305	1325	81.0 - 93.1	272.2 - 275.0	1435 - 1605 1625 - 1705	194.3 - 246.7 260.8 - 285.0	237.7 - 250.5 253.4 - 259.1	
	1335	1620	55.2 - 158.9	276.4 - 299.5				
	1215	1415	201.4 - 273.9	108.5 - 125.3				

16.7 KAUAI, HAWAII

DATE YW/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	IC PHASE	TIME(UT) HHMM - HHMM	ACTIVITY CML III	IO PHASE
67/12/06	1500 - 1740	301.1 - 37.9	131.6 - 154.1			
	1505 - 1730	94.7 - 182.4	336.5 - -3.0	1625 - 1730	143.1 - 182.4	-12.2 - -3.0
67/12/08	1010 - 1025	67.0 - 76.0	137.5 - 139.6			
	1100 - 1130	97.2 - 115.3	144.5 - 148.7			
	1155 - 1740	130.4 - 339.0	152.3 - 201.0	1605 - 1740	281.6 - 339.0	187.5 - 201.0
67/12/09	1005 - 1040	214.5 - 235.7	-19.0 - -14.0			
	1145 - 1230	275.0 - 302.2	-4.8 - 1.6			
	1340 - 1430	344.5 - 14.7	11.4 - 18.5			
	1440 - 1740	20.8 - 129.6	19.9 - 45.2			
67/12/10	1140 - 1210	62.5 - 80.7	157.0 - 201.3			
	1220 - 1300	86.7 - 110.9	202.7 - 208.4			
	1320 - 1325	123.0 - 144.1	211.2 - 216.2			
	1415 - 1745	156.2 - 283.2	219.0 - 248.9			
67/12/11	0955 - 1205	149.6 - 228.2	26.6 - 44.8			
	1230 - 1550	253.3 - 4.3	48.3 - 76.4			
	1605 - 1740	13.3 - 70.8	78.5 - 91.8			
67/12/12	0550 - 1005	237.2 - 306.3	228.6 - 230.7	1050 - 1205	333.5 - 18.8	237.1 - 247.8
	1050 - 1205	333.5 - 18.8	237.1 - 247.8	1525 - 1650	139.7 - 191.1	276.3 - 288.4
	1325 - 1705	67.2 - 200.2	259.2 - 290.5			
67/12/13	1030 - 1235	112.0 - 187.5	78.1 - 95.6	1100 - 1235	130.1 - 187.5	82.3 - 95.6
	1345 - 1530	229.9 - 293.3	105.4 - 110.2	1345 - 1530	229.9 - 293.3	105.4 - 120.2
	1600 - 1720	311.5 - 359.8	124.4 - 135.6	1615 - 1650	320.5 - 341.7	126.5 - 131.4
67/12/14	0945 - 1210	235.4 - 323.0	275.2 - 295.9	1040 - 1210	268.6 - 323.0	283.0 - 295.9
	1310 - 1735	359.3 - 159.5	304.4 - -18.0			
67/12/15	0540 - 1000	22.9 - 35.0	117.7 - 120.5			

16.7 KAUAI, HAWAII						
DATE	TIME(UT)	OBSERVATIONS	IO PHASE	TIME(UT)	ACTIVITY	IO PHASE
YY/MM/DD	HHMM - HHMM	CML III		HHMM - HHMM	CML III	
67/12/15	1010 - 1210 1355 - 1740	41.1 - 113.6 177.1 - 313.1	121.9 - 136.7 153.5 - 185.3	1520 - 1655	228.5 - 285.9	165.5 - 178.9
67/12/16	1235 - 1530 1545 - 1835 1850 - 1835	279.3 - 25.1 34.2 - 64.4 73.5 - 137.0	-13.4 - 11.3 22.6 - 37.4			
67/12/17	1250 - 1335 1355 - 1650	75.0 - 106.2 118.3 - 224.1	191.3 - 167.7 200.5 - 255.4			
67/12/18	1225 - 1725	214.5 - 35.9	32.1 - 74.2	1335 - 1410	256.8 - 278.0	41.9 - 46.8
67/12/19	0940 - 1140 1345 - 1715	265.3 - 337.9 53.5 - 180.4	211.5 - 228.6 246.4 - 276.3	1015 - 1140	286.5 - 337.9	216.5 - 228.6
67/12/20	1015 - 1135 1200 - 1700	77.1 - 125.5 140.6 - 322.0	60.5 - 71.7 75.2 - 117.3	1220 - 1320 1505 - 1520	152.7 - 189.0 252.5 - 261.5	72.0 - 86.4 101.2 - 103.3
68/01/20	0940 - 1005 1150 - 1800	46.1 - 61.3 124.7 - 348.5	245.4 - 249.0 263.9 - 316.5	1255 - 1315	164.0 - 176.1	273.2 - 276.0
68/01/21	1100 - 1650	245.2 - 96.8	100.0 - 149.3	1235 - 1300	302.6 - 317.7	113.3 - 116.8
68/01/22	0605 - 0855 0910 - 0930 1015 - 1700	290.1 - 320.3 329.4 - 341.5 8.7 - 253.5	279.4 - 286.5 268.7 - 291.5 297.9 - -4.8	1130 - 1225	54.0 - 87.3	308.6 - 316.4
68/01/23	0835 - 1010 1020 - 1725	98.9 - 156.3 162.4 - 59.3	126.5 - 139.9 141.3 - 201.6	1435 - 1525	316.6 - 346.8	177.4 - 184.5
68/01/24	0820 - 1015 1030 - 1115 1135 - 1740	240.5 - 310.0 319.1 - 346.3 358.4 - 219.1	328.9 - -14.8 -12.7 - -6.4 -3.6 - 47.7	1035 - 1100	322.1 - 337.2	-12.0 - -8.5
68/01/25	0920 - 1155	67.5 - 161.2	180.1 - 202.2			

16.7 KAUAI, HAWAII

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CWL III	IC PHASE	TIME(UT) HHMM - HHMM	ACTIVITY CWL III	IO PHASE
68/01/25	1215 - 1415	173.3 - 245.8	205.0 - 222.1	1300 - 1415	200.5 - 245.8	211.4 - 222.1
	1535 - 1600	294.2 - 305.3	233.5 - 237.1	1535 - 1600	294.2 - 309.3	233.5 - 237.1
	1615 - 1745	318.4 - 12.8	239.2 - 252.0	1615 - 1745	318.4 - 12.8	239.2 - 252.0
68/01/26	1100 - 1205	276.6 - 317.9	38.4 - 47.5	1410 - 1425	33.5 - 42.6	65.1 - 67.2
	1215 - 1755	324.0 - 169.5	48.9 - 56.6	1445 - 1505	54.7 - 66.8	70.0 - 72.8
				1525 - 1755	78.9 - 169.5	75.6 - 96.6
68/01/27	1415 - 1630	187.2 - 268.8	269.7 - 288.9	1600 - 1625	250.7 - 265.8	284.6 - 288.2
	1645 - 1750	277.9 - 317.2	291.0 - 300.3			
68/01/28	0915 - 1110	156.5 - 226.0	70.5 - 86.7	0915 - 1000	156.5 - 183.7	70.5 - 76.8
	1400 - 1720	328.8 - 89.8	110.5 - 138.7			
68/01/29	1040 - 1155	352.6 - 43.9	266.6 - 297.3			
	1215 - 1710	56.0 - 234.4	300.1 - 341.9			
68/01/30	1055 - 1740	158.4 - 43.2	131.5 - 188.9			
68/01/31	0900 - 0950	235.5 - 269.7	319.8 - 326.9			
	1035 - 1110	297.0 - 318.1	333.3 - 338.2			
	1155 - 1715	345.3 - 178.8	-15.5 - 29.5			
68/02/01	1150 - 1625	133.0 - 299.3	166.6 - 225.8			
	1635 - 1700	305.3 - 320.4	227.2 - 230.8			
68/02/02	0850 - 0950	174.9 - 211.1	5.5 - 13.9			
	1330 - 1440	344.2 - 26.5	44.8 - 54.6			
68/02/03	0935 - 1010	352.8 - 13.9	215.0 - 220.0			
	1125 - 1430	56.3 - 171.1	230.7 - 257.0			
	1455 - 1545	186.2 - 216.5	260.6 - 267.7			
	1605 - 1745	228.6 - 289.0	270.6 - 284.8			
68/02/04	0955 - 1100	155.5 - 194.8	61.5 - 70.6			

DATE		TIME(UT)	OBSERVATIONS	16.7 KAUAI, HAWAII		TIME(UT)	ACTIVITY	IO PHASE
YY/MM/DD	HHMM	HHMM - HHMM	CNL III	IO PHASE	HHMM - HHMM	CHL III		
68/02/17	0900 - 1045	281.3 - 344.7	180.6 - 195.5					
	1120 - 1305	5.9 - 65.4	200.5 - 215.5				46.2 - 60.3	210.5 - 213.3
68/02/18	0940 - 1120	96.1 - 162.6	30.3 - 45.7					
	1205 - 1250	183.8 - 211.0	50.6 - 56.9					
	1310 - 1505	223.1 - 252.6	59.7 - 75.9					
	1545 - 1625	316.8 - 341.0	81.5 - 87.1					
68/02/19	0805 - 0830	189.4 - 204.5	220.4 - 223.9					
	0925 - 1125	237.7 - 310.3	231.8 - 248.9					
	1140 - 1315	319.4 - 16.8	451.0 - 264.5					
	1400 - 1630	44.0 - 134.7	270.9 - 292.2					
68/02/20	0925 - 1030	28.4 - 67.7	75.1 - 84.2					
	1235 - 1400	143.3 - 194.7	101.8 - 113.8				152.4 - 185.6	183.9 - 111.6
68/02/21	0940 - 1010	188.2 - 206.3	281.5 - 285.7					
68/02/22	0930 - 1005	332.8 - 354.0	122.8 - 127.7					
	1110 - 1150	33.3 - 57.4	136.9 - 142.6					
	1210 - 1330	65.5 - 117.9	145.4 - 156.8					
68/02/23	0940 - 1115	129.5 - 187.0	328.8 - 342.2					
	1150 - 1225	208.1 - 247.4	-12.9 - -3.8					
	1312 - 1345	259.5 - 277.7	-1.0 - 3.2					
68/02/24	0830 - 1000	237.9 - 292.3	161.6 - 174.4				246.9 - 262.1	183.8 - 167.3
	1010 - 1340	298.3 - 65.3	175.8 - 205.8					
68/02/25	0940 - 1040	70.9 - 107.1	15.8 - 24.2					
	1050 - 1105	113.2 - 122.3	25.6 - 27.7					
	1222 - 1325	170.6 - 213.0	38.9 - 48.7					
68/02/26	0830 - 0930	179.2 - 215.5	209.2 - 217.8					

DATE		TIME(UT)	OBSERVATIONS	IC PHASE	TIME(UT)	ACTIVITY	IO PHASE
YY/MM/DD	CC	HHMM - HHMM	CML III		HHMM - HHMM	CML III	
68/02/26		1030 - 1055	251.8 - 266.9	226.3 - 229.9	1035 - 1055	254.8 - 266.9	227.0 - 229.9
		1140 - 1225	256.1 - 321.3	236.3 - 242.7	1140 - 1225	294.1 - 321.3	236.3 - 242.7
		1235 - 1330	327.3 - 0.6	244.1 - 242.0			
68/02/28		0930 - 1115	307.5 - 11.0	168.2 - 123.0	1010 - 1030	311.7 - 343.6	113.8 - 116.6
68/03/17		0840 - 0905	318.1 - 333.2	323.2 - 326.8			
		0930 - 1015	346.3 - 15.5	330.3 - 326.6			
68/03/18		0800 - 0825	84.5 - 105.7	163.4 - 165.4			
		0900 - 0925	120.8 - 154.0	168.9 - 176.8			
68/03/20		1300 - 1500	207.1 - 279.6	250.6 - 267.7	1325 - 1500	222.2 - 279.6	254.2 - 267.7

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	16.7 CARNARVON, AUSTRALIA		TIME(UT) HHMM - HHMM	ACTIVITY CML III	IO PHASE
		OBSERVATIONS CML III	IO PHASE			
66/05/04	1900 - 2230	252.5 - 59.4	246.0 - 275.8			
66/05/05	1840 - 2000	70.8 - 119.2	87.0 - 98.2			
66/05/06	1835 - 2205	218.2 - 345.2	285.4 - 319.3			
66/05/08	1820 - 2120	150.0 - 258.8	334.3 - 359.6			
66/05/09	1800 - 2130	288.3 - 55.3	174.0 - 203.6			
66/05/10	1800 - 2200	76.7 - 223.8	18.2 - 52.0			
66/05/11	1750 - 2210	223.1 - 20.3	219.2 - 256.1			
66/05/12	1730 - 2220	1.5 - 176.7	60.5 - 101.1	2130 - 2205	146.5 - 167.7	94.1 - 99.0
66/05/13	1720 - 2140	145.8 - 303.0	261.9 - 298.9			
66/05/14	1800 - 2150	320.4 - 59.5	111.0 - 143.2			
66/05/15	1710 - 2255	80.7 - 289.2	307.5 - 356.5	2100 - 2255	219.7 - 289.2	340.2 - 356.5
66/05/17	2025 - 2210	139.4 - 202.9	22.0 - 36.8			
66/05/18	2015 - 2135	283.8 - 332.2	223.0 - 234.4			
66/05/19	2030 - 2215	83.3 - 146.8	65.1 - 83.8			
66/05/20	2005 - 2140	218.0 - 276.1	268.6 - 282.2	2115 - 2140	261.0 - 276.1	278.6 - 282.2
66/05/21	1955 - 2135	3.0 - 63.5	110.5 - 124.5			
66/05/22	2005 - 2155	159.5 - 226.0	315.7 - 331.3			
66/05/23	1940 - 2150	254.9 - 13.5	154.3 - 173.1			
66/05/26	2030 - 2135	56.5 - 95.8	82.0 - 61.7			
66/05/27	2015 - 2135	157.9 - 246.2	253.4 - 264.8			

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	16.7 CARNARVEN, AUSTRALIA		ACTIVITY CML III	IO PHASE
			IC PHASE	TIME(UT) HHMM - HHMM		
66/10/02	1840 - 2020	172.8 - 239.3	176.4 - 192.0			
66/10/03	1855 - 2120	332.3 - 60.0	22.8 - 43.2	2100 - 2120	47.9 - 60.0	40.4 - 43.2
66/10/12	2020 - 2050	298.1 - 316.3	64.9 - 69.1			
66/10/14	2015 - 2120	236.1 - 281.5	110.6 - 121.1			
66/10/15	2005 - 2125	20.6 - 69.0	213.3 - 324.6			
66/10/16	2000 - 2125	168.1 - 219.5	155.1 - 167.1			
66/10/17	2030 - 2130	336.7 - 13.0	3.7 - 12.1			
66/10/18	1955 - 2135	106.1 - 166.5	201.3 - 215.5			
66/10/20	2030 - 2125	68.3 - 101.5	253.4 - 261.3			
66/10/22	2030 - 2135	5.4 - 48.6	300.6 - 309.8			
66/10/23	2010 - 2135	147.8 - 199.2	140.4 - 152.4			
66/10/25	1935 - 2140	67.7 - 143.3	162.3 - 200.1			
66/10/26	2030 - 2115	251.5 - 278.7	34.2 - 40.5	2030 - 2115	251.5 - 278.7	34.2 - 40.5
66/10/27	1925 - 2115	2.7 - 65.2	228.0 - 243.7			
66/10/28	2000 - 2125	174.4 - 225.8	76.5 - 88.4			
66/10/29	1915 - 2115	257.8 - 10.3	273.9 - 290.9			
	2125 - 2140	16.4 - 25.5	292.4 - 298.5			
66/11/01	1905 - 2100	23.4 - 92.9	162.1 - 178.4			
	2115 - 2145	102.0 - 120.1	180.5 - 184.7			
66/11/02	1900 - 2110	171.0 - 249.5	5.7 - 23.9			
66/11/07	1930 - 2140	221.9 - 300.5	307.2 - 325.6	1945 - 2140	231.0 - 300.5	309.4 - 325.6

DATE		TIME(UT)		OBSERVATIONS		16.7 CARNAFVCN, AUSTRALIA		ACTIVITY		IO PHASE	
YY/MM/DD		HHMM	HHMM	CML III		IO PHASE		CML III			
66/11/10		1920 - 2130		307.6 - 26.2		155.5 - 214.0		2000 - 2035		201.2 - 206.2	
66/11/12		1925 - 2105		251.8 - 312.3		243.5 - 257.8		1925 - 1955		243.5 - 247.8	
66/11/14		2015 - 2105		223.3 - 253.5		297.9 - 305.0		2015 - 2105		297.9 - 305.0	
66/11/16		2015 - 2135		164.5 - 212.8		344.9 - 356.1					
66/11/17		1900 - 2010		269.7 - 312.0		177.0 - 186.9		1900 - 1940		177.0 - 182.7	
66/11/18		2110 - 2145		132.9 - 160.1		39.3 - 44.2					
66/11/19		1820 - 2140		186.8 - 307.7		218.6 - 247.1		1930 - 2115		225.6 - 243.6	
66/11/20		1850 - 2010		355.5 - 43.9		66.3 - 77.5					
66/11/21		1845 - 1910		143.1 - 158.2		269.6 - 273.1		2055 - 2140		288.0 - 294.4	
		2030 - 2140		206.6 - 248.9		284.5 - 294.4					
66/11/26		2030 - 2130		239.7 - 276.0		221.6 - 230.2		2040 - 2130		223.1 - 230.2	
66/11/27		1930 - 2100		354.1 - 48.5		56.6 - 69.2					
66/11/28		1805 - 2135		93.3 - 220.3		248.4 - 278.3		1840 - 1900		253.4 - 256.3	
66/11/29		1845 - 2110		304.4 - 355.8		105.4 - 117.4					
66/12/01		1820 - 1950		194.3 - 212.4		140.5 - 144.7					
		1905 - 2135		221.5 - 312.2		146.8 - 168.1		2015 - 2100		156.8 - 163.2	
66/12/02		1815 - 2030		341.9 - 63.5		344.2 - 3.1					
66/12/04		2035 - 2115		7.9 - 32.0		50.5 - 56.1					
66/12/05		1745 - 2105		55.7 - 176.7		230.3 - 258.8					
66/12/14		1750 - 1900		334.7 - 17.1		263.3 - 273.3					
66/12/15		1805 - 2040		134.5 - 228.2		108.2 - 130.1		1810 - 1905		108.9 - 116.7	

16.7 CARNARVEN, AUSTRALIA					
DATE	TIME(UT)	OBSERVATIONS	IC PHASE	TIME(UT)	ACTIVITY
YY/MM/DD	HHMM - HHMM	CML III		HHMM - HHMM	CML III
66/12/24	2010 - 2030	126.2 - 138.3	158.3 - 161.2		
66/12/27	1805 - 2120	142.7 - 260.6	31.7 - 59.1	1810 - 1830 2050 - 2120	145.7 - 157.8 242.4 - 260.6
67/01/04	1840 - 2045	289.4 - 5.0	225.9 - 243.7	1840 - 2040	289.4 - 1.9
67/01/05	1830 - 2100	74.0 - 164.7	67.5 - 88.6	1915 - 2100	101.2 - 164.7
67/06/30	2125 - 2335	189.9 - 268.4	58.6 - 77.0	2150 - 2230	205.0 - 229.2
67/08/31	2125 - 2235	340.2 - 22.5	261.0 - 270.9		
67/09/01	2125 - 2400	130.6 - 224.3	105.2 - 127.0		
67/09/02	2120 - 2250	277.9 - 332.3	307.0 - 319.7		
67/09/03	2115 - 2305	65.2 - 131.7	150.1 - 165.5		
67/09/04	2110 - 2255	212.6 - 276.0	352.5 - 7.4		
67/09/05	2110 - 2215 2305 - 2350	2.9 - 42.2 72.4 - 99.6	195.6 - 204.7 211.7 - 218.0		
67/09/06	2120 - 2155	159.3 - 180.5	40.8 - 45.8		
67/09/08	2110 - 2200	94.0 - 124.2	86.1 - 93.1		
67/09/09	2110 - 2150	244.4 - 268.6	288.5 - 294.1		
67/09/10	2100 - 2150	28.7 - 58.9	131.1 - 138.1		
67/09/11	2100 - 2150	179.1 - 209.3	333.9 - 341.1		
67/09/28	2050 - 2115	205.5 - 236.7	188.4 - 194.7		
67/10/01	1935 - 2120	255.4 - 318.9	68.5 - 83.3		
67/10/02	1935 - 2145	45.8 - 124.4	270.9 - 289.4		

DATE		TIME(UT)	OBSERVATIONS		16.7		CARNARVON, AUSTRALIA		TIME(UT)	ACTIVITY	IO PHASE
YY/MM/DD		HHMM - HHMM	CML III				IO PHASE		HHMM - HHMM	CML III	
67/10/03	1930 - 2045	193.2 - 236.5	114.2 - 124.7								
67/10/04	1920 - 2125	337.6 - 53.1	315.7 - 333.5								
67/10/06	1950 - 2120	256.5 - 350.9	7.0 - 19.8								
67/10/07	1920 - 2140	68.8 - 153.4	205.4 - 215.1								
67/10/08	1920 - 2140	215.2 - 303.9	45.6 - 69.3								
67/10/09	1915 - 2145	6.6 - 57.3	251.3 - 272.5								
67/10/11	2100 - 2140	11.0 - 35.1	313.1 - 318.8								
67/10/12	1950 - 2125	115.1 - 176.5	146.6 - 159.9								
67/10/14	2005 - 2140	69.0 - 126.4	155.0 - 208.4								
67/10/15	1950 - 2150	210.4 - 282.9	37.1 - 54.1		2055 - 2150		249.7 - 282.9		46.3 - 54.1		
67/10/16	1900 - 2010 2125 - 2150	330.6 - 12.9 56.2 - 73.3	232.4 - 242.3 252.9 - 256.5								
67/10/17	1945 - 2110	146.2 - 199.6	83.0 - 94.9		1950 - 2050		151.2 - 187.5		83.7 - 92.1		
67/10/21	2030 - 2115	57.2 - 84.4	181.9 - 188.3								
67/10/22	2000 - 2035	189.5 - 210.7	21.9 - 26.8								
67/10/30	1840 - 2120	264.8 - 1.6	196.5 - 219.1		1840 - 2000		264.8 - 313.2		156.5 - 207.8		
67/11/04	1825 - 2115	266.2 - 30.9	131.5 - 155.4		1905 - 2010		312.3 - 351.6		137.2 - 146.3		
67/11/06	1805 - 2100	217.0 - 322.8	175.2 - 199.8		1900 - 2015		250.3 - 295.6		182.9 - 193.5		
67/11/09	1910 - 2155	347.8 - 37.6	75.2 - 58.3								
67/11/10	2015 - 2125	177.6 - 226.0	287.4 - 298.8								
67/11/11	2000 - 2205	315.0 - 34.6	128.6 - 146.1								

DATE		TIME(UT)		OBSERVATIONS		16.7 CARNARVEN, AUSTRALIA		TIME(UT)		ACTIVITY		IO PHASE	
YR/MN/DD		HHMM - HHMM		CML III		IC PHASE		HHMM - HHMM		CML III			
67/11/12	1910 - 2110	75.3 - 151.9	325.3 - -17.6										
67/11/12	1905 - 2115	226.8 - 305.4	167.3 - 185.6					1940 - 2055	248.0 - 293.3	172.3 - 182.8			
67/11/16	1935 - 2115	336.5 - 36.9	62.5 - 76.6										
67/11/19	2055 - 2155	116.4 - 152.7	324.0 - 322.5					2115 - 2155	128.5 - 152.7	326.8 - 332.5			
67/11/21	2045 - 2120	51.4 - 78.6	9.6 - 15.9										
67/11/22	2035 - 2140	195.9 - 235.2	210.6 - 219.8										
67/11/30	2000 - 2220	295.1 - 23.7	34.0 - 53.7					2020 - 2220	311.2 - 23.7	36.8 - 53.7			
67/12/01	2010 - 2200	95.7 - 162.2	238.1 - 253.8					2010 - 2100	95.7 - 125.9	238.1 - 245.2			
67/12/02	2000 - 2105	240.2 - 275.5	80.6 - 89.7										
67/12/04	2100 - 2140	217.6 - 241.8	135.5 - 141.1										
67/12/07	2010 - 2140	279.1 - 333.5	19.6 - 32.3										
67/12/08	2015 - 2140	72.7 - 124.1	223.0 - 235.0										
67/12/09	1815 - 2130	150.7 - 268.6	50.1 - 77.5					1815 - 1900	150.7 - 178.0	50.1 - 56.5			
								2040 - 2130	238.4 - 268.6	70.5 - 77.5			
67/12/10	2000 - 2130	4.8 - 59.2	268.1 - 280.9										
67/12/13	1920 - 2000	72.4 - 96.6	152.5 - 158.1										
	2015 - 2125	105.6 - 148.0	160.2 - 170.1										
67/12/14	2105 - 2235	286.5 - 340.9	11.7 - 24.4					2200 - 2235	319.7 - 340.9	19.4 - 24.4			
67/12/15	2130 - 2230	52.2 - 128.5	217.9 - 226.4										
67/12/17	2105 - 2125	18.3 - 30.4	261.7 - 264.5										
	2155 - 2300	48.5 - 87.8	268.8 - 278.1										
67/12/18	1950 - 2235	123.5 - 223.3	54.5 - 117.6					1955 - 2045	126.6 - 156.8	95.2 - 102.2			

DATE		TIME(UT)		OBSERVATIONS		16.7		CARNARVON, AUSTRALIA		TIME(UT)		ACTIVITY		IO PHASE	
		HHMM - HHMM	HHMM - HHMM	CML III	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	IO PHASE	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM	CML III	HHMM - HHMM	HHMM - HHMM	HHMM - HHMM
67/12/19	1835 - 2200	1835 - 2200	1835 - 2200	228.8 - 352.7	287.7 - 316.8	287.7 - 316.8	287.7 - 316.8	287.7 - 316.8	287.7 - 316.8	1940 - 2010	268.1 - 286.2	296.9 - 301.2			
67/12/20	1830 - 1925	1830 - 1925	1830 - 1925	16.4 - 67.8	129.9 - 141.9	129.9 - 141.9	129.9 - 141.9	129.9 - 141.9	129.9 - 141.9						
67/12/21	1925 - 2000	1925 - 2000	1925 - 2000	200.3 - 221.4	-18.0 - -13.0	-18.0 - -13.0	-18.0 - -13.0	-18.0 - -13.0	-18.0 - -13.0						
67/12/28	1910 - 2120	1910 - 2120	1910 - 2120	165.6 - 250.2	324.5 - -15.7	324.5 - -15.7	324.5 - -15.7	324.5 - -15.7	324.5 - -15.7						
67/12/29	1930 - 2050	1930 - 2050	1930 - 2050	340.4 - 16.7	172.8 - 181.3	172.8 - 181.3	172.8 - 181.3	172.8 - 181.3	172.8 - 181.3						
67/12/31	2030 - 2245	2030 - 2245	2030 - 2245	305.9 - 27.5	225.7 - 245.0	225.7 - 245.0	225.7 - 245.0	225.7 - 245.0	225.7 - 245.0	2030 - 2220	305.9 - 12.4	225.7 - 241.4			
68/01/01	1920 - 2310	1920 - 2310	1920 - 2310	54.2 - 193.2	59.7 - 92.0	59.7 - 92.0	59.7 - 92.0	59.7 - 92.0	59.7 - 92.0	2135 - 2300	135.8 - 187.2	78.6 - 90.6			
68/01/02	2005 - 2220	2005 - 2220	2005 - 2220	232.0 - 313.7	269.6 - 288.9	269.6 - 288.9	269.6 - 288.9	269.6 - 288.9	269.6 - 288.9	2045 - 2055	256.2 - 262.3	275.3 - 276.8			
68/01/03	1815 - 1905	1815 - 1905	1815 - 1905	316.2 - 346.4	57.3 - 104.3	57.3 - 104.3	57.3 - 104.3	57.3 - 104.3	57.3 - 104.3	1815 - 1905	316.2 - 346.4	57.3 - 104.3			
68/01/07	2005 - 2045	2005 - 2045	2005 - 2045	265.3 - 289.5	206.9 - 212.6	206.9 - 212.6	206.9 - 212.6	206.9 - 212.6	206.9 - 212.6	2005 - 2045	265.3 - 289.5	206.9 - 212.6			
68/01/10	1910 - 2115	1910 - 2115	1910 - 2115	324.0 - 39.6	90.0 - 107.5	90.0 - 107.5	90.0 - 107.5	90.0 - 107.5	90.0 - 107.5	1910 - 1955	324.0 - 351.2	90.0 - 96.3			
68/01/12	1950 - 2210	1950 - 2210	1950 - 2210	285.6 - 14.2	142.5 - 162.3	142.5 - 162.3	142.5 - 162.3	142.5 - 162.3	142.5 - 162.3						
68/01/13	1920 - 2135	1920 - 2135	1920 - 2135	62.1 - 143.7	-17.2 - 1.8	-17.2 - 1.8	-17.2 - 1.8	-17.2 - 1.8	-17.2 - 1.8						
68/01/14	1802 - 2145	1802 - 2145	1802 - 2145	167.4 - 300.4	174.8 - 206.1	174.8 - 206.1	174.8 - 206.1	174.8 - 206.1	174.8 - 206.1						
68/01/15	1735 - 2115	1735 - 2115	1735 - 2115	299.9 - 73.0	15.0 - 45.9	15.0 - 45.9	15.0 - 45.9	15.0 - 45.9	15.0 - 45.9						
68/01/16	1745 - 2115	1745 - 2115	1745 - 2115	56.7 - 223.6	219.4 - 249.3	219.4 - 249.3	219.4 - 249.3	219.4 - 249.3	219.4 - 249.3						
68/01/20	2100 - 2235	2100 - 2235	2100 - 2235	57.3 - 154.7	-18.0 - -4.6	-18.0 - -4.6	-18.0 - -4.6	-18.0 - -4.6	-18.0 - -4.6						

DATE		TIME(UT)	OBSERVATIONS	IO PHASE	TIME(UT)	ACTIVITY	IO PHASE
YY/MM/DD	MM/DD	HHMM - HHMM	CML III		HHMM - HHMM	CML III	
00/01/21	2000 - 2100	211.7 - 248.0	176.2 - 184.7				
	2130 - 2235	269.1 - 305.4	189.7 - 198.2				
00/01/22	2120 - 2215	50.8 - 84.0	31.8 - 39.5				
00/02/03	1710 - 1745	267.9 - 289.0	279.8 - 284.8				
00/02/10	1800 - 2215	274.0 - 67.1	272.9 - 308.4		1945 - 2055	336.4 - 18.8	267.1 - 297.1
00/02/11	1700 - 1810	27.4 - 69.7	105.6 - 116.5		1700 - 1730	27.4 - 45.5	104.5 - 110.8
	1830 - 1855	84.8 - 96.9	120.0 - 122.8				
	1910 - 2220	106.0 - 220.8	124.9 - 151.8				
00/02/12	1925 - 2000	245.7 - 286.9	331.6 - 336.6				
	2020 - 2050	302.0 - 317.1	340.1 - 343.6				
	2110 - 2215	329.2 - 6.5	-13.6 - -4.4				
00/02/13	1815 - 1900	14.1 - 41.3	164.5 - 170.9				
00/02/17	1740 - 1950	235.7 - 314.3	254.7 - 273.2		1740 - 1810	235.7 - 253.8	254.7 - 259.0
	2010 - 2225	326.4 - 48.0	276.0 - 295.2				
00/02/22	2000 - 2260	356.7 - 66.3	213.0 - 219.4				
00/02/25	2000 - 2115	85.7 - 131.1	102.8 - 113.4		2025 - 2115	100.9 - 131.1	106.3 - 113.4
00/05/01	1450 - 1705	115.3 - 196.9	173.3 - 192.5				
00/05/15	1345 - 1550	21.8 - 97.4	131.7 - 149.5				
00/05/20	1440 - 1520	87.0 - 111.2	74.2 - 81.9				
00/05/26	1340 - 1425	233.0 - 278.3	208.9 - 219.5				

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS		16.7 GRAND CANARY IS., SPAIN		ACTIVITY CML III	10 PHASE
		CML III	10 PHASE	TIME(UT) HHMM - HHMM	10 PHASE		
68/10/20	C540 - C655	81.1 - 126.4	145.3 - 155.8				
68/10/22	C515 - C550	6.7 - 27.9	188.0 - 192.9				
68/10/23	C610 - C635	190.4 - 205.5	39.2 - 42.8				
68/10/24	C600 - C620	334.7 - 352.9	240.5 - 244.8	0600 - 0630	334.7 - 352.9	240.6 - 244.8	
68/10/26	C420 - C440	215.1 - 227.2	272.9 - 275.8				
	C455 - C615	236.2 - 264.6	277.9 - 289.2				
68/10/27	C525 - C655	44.8 - 99.2	126.3 - 139.0				
	0715 - C735	111.2 - 123.3	141.8 - 144.6				
68/10/28	C410 - C500	145.8 - 180.0	318.2 - 34.7				
	0555 - C620	213.3 - 228.4	-26.8 - -23.3				
68/10/30	C630 - C610	139.0 - 163.2	16.6 - 22.3				
68/10/31	C400 - C510	235.0 - 277.3	207.0 - 216.8				
68/11/01	C355 - C440	22.4 - 45.6	50.1 - 56.5				
	C540 - C635	85.8 - 119.1	65.0 - 72.8				
68/11/02	0350 - C505	169.8 - 215.1	251.9 - 262.5				
	C515 - C600	221.1 - 248.3	263.3 - 270.2				
	C625 - C705	263.5 - 287.6	273.8 - 279.4				
68/11/04	C355 - C615	113.6 - 158.2	299.3 - -40.9				
68/11/05	C335 - C640	251.9 - 3.8	140.5 - 166.4	0340 - 0450	255.0 - 297.3	141.2 - 151.0	
				0610 - 0640	345.6 - 3.8	162.2 - 166.4	
68/11/06	C330 - C440	35.3 - 81.7	-17.4 - -7.4				
	C450 - C640	87.7 - 154.2	-6.0 - 9.7				
68/11/07	C355 - C415	204.9 - 241.1	185.6 - 198.0				

DATE		TIME(UT)	OBSERVATIONS	16.7 GRAND CANARY IS., SPAIN		ACTIVITY	IO PHASE
YY/MM/DD	HHMM - HHMM	HHMM - HHMM	CML III	IO PHASE	TIME(UT)	CML III	
					HHMM - HHMM		
68/11/07	0510 - 0550		250.2 - 274.4	200.1 - 205.7			
68/11/08	0425 - 0650		15.4 - 101.1	37.5 - 59.1			
68/11/09	0415 - 0655		157.0 - 254.5	238.7 - 261.2			
68/11/10	0320 - 0630		275.0 - 29.8	75.1 - 102.0			
68/11/11	0245 - 0550		44.3 - 156.1	272.6 - 298.0			
68/11/12	0250 - 0715		197.7 - 357.9	117.5 - 154.7			
68/11/13	0235 - 0700		339.1 - 139.3	-42.0 - -4.3			
68/11/14	0230 - 0655		126.5 - 286.7	141.1 - 198.2			
68/11/15	0225 - 0650		273.9 - 74.1	3.6 - 41.3			
68/11/16	0230 - 0245 0305 - 0505 0630 - 0700		67.4 - 76.5 68.5 - 161.1 212.5 - 230.6	267.3 - 203.4 212.3 - 219.1 241.1 - 245.3			
68/11/17	0405 - 0625		275.3 - 359.9	64.8 - 84.6			
68/11/18	0300 - 0530		26.4 - 117.1	258.0 - 279.3			
68/11/19	0210 - 0420 0435 - 0515 0530 - 0625		146.6 - 225.2 234.3 - 258.5 267.5 - 300.8	95.3 - 113.6 115.7 - 131.3 123.4 - 131.1			
68/11/20	0310 - 0440		333.4 - 27.0	306.3 - -40.9			
68/11/21	0450 - 0630		104.3 - 244.7	164.1 - 176.1			
68/11/22	0440 - 0650		328.7 - 47.2	6.2 - 24.7			
68/11/23	0305 - 0615		61.7 - 176.5	155.7 - 232.4			
68/11/24	0300 - 0700		205.1 - 354.2	39.0 - 73.0			

DATE YY/MM/DD	TIME(LT) HHMM - HHMM	OBSERVATIONS CML III	16.7 GRAND CANARY IS., SPAIN		ACTIVITY CML III	IO PHASE
			IO PHASE	TIME(UT) HHMM - HHMM		
68/11/26	C250 - C315	149.0 - 231.7	84.4 - 104.8			
	0550 - C625	252.8 - 276.0	109.7 - 114.6			
68/11/27	0245 - C305	291.5 - 303.6	284.2 - 289.0			
	C325 - C650	315.6 - 79.6	261.8 - -39.0			
68/11/28	0240 - C400	78.9 - 127.3	129.5 - 140.7			
	C425 - C545	142.4 - 190.7	144.2 - 155.4			
68/11/30	C225 - C605	10.8 - 143.8	173.7 - 204.6			
	C625 - C700	155.9 - 177.0	207.4 - 212.3			
68/12/01	0220 - C240	158.2 - 170.3	16.8 - 19.6			
	C300 - C710	182.4 - 333.5	22.4 - 57.9			
68/12/03	C340 - C430	147.6 - 177.8	75.0 - 82.0			
	0530 - C610	214.1 - 236.2	90.5 - 56.1			
68/12/05	0635 - C650	253.4 - 262.4	99.6 - 101.7			
	C245 - C700	55.3 - 209.4	113.8 - 149.6			
68/12/06	0450 - C655	281.3 - 356.9	-25.5 - -7.7			
	0240 - C310	353.3 - 11.4	159.5 - 163.7			
68/12/07	C335 - C400	26.5 - 41.6	147.2 - 170.7			
	0425 - C700	56.7 - 150.4	174.2 - 195.9			
68/12/08	0235 - C250	140.7 - 149.8	2.4 - 4.6			
	C305 - C355	158.9 - 189.1	6.7 - 13.8			
68/12/09	C625 - C710	276.8 - 307.0	35.1 - 41.5			
	0435 - C630	3.8 - 73.3	224.1 - 236.3			
68/12/10	0230 - C345	78.7 - 124.0	48.7 - 59.4	0330 - 0345	115.0 - 124.0	57.2 - 59.4
	C400 - C700	133.1 - 241.9	41.5 - 56.9	0400 - 0500	133.1 - 169.4	61.5 - 69.9
				0520 - 0540	181.5 - 153.6	72.8 - 75.6

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	16.7 GRAND CANARY IS., SPAIN		IC PHASE	TIME(UT) HHMM - HHMM	ACTIVITY CML III	IO PHASE
		OBSERVATIONS CML III					
68/12/11	C220 - C430	223.2 - 301.8	243.8 - 268.2				
	C535 - C700	341.0 - 32.4	277.4 - 289.5				
68/12/12	C210 - C510	7.6 - 116.4	92.6 - 117.9		0320 - 0350	49.9 - 68.1	102.5 - 106.7
	C535 - C550	131.6 - 140.6	121.4 - 123.5				
	C600 - C640	146.7 - 170.8	124.9 - 130.5				
	C255 - C350	185.3 - 218.6	301.8 - 309.6				
68/12/13	C535 - C600	282.1 - 9.7	-35.5 - -14.8				
	C205 - C320	305.6 - 332.8	138.4 - 144.7				
68/12/14	C345 - C455	6.1 - 120.9	152.4 - 179.0				
	C205 - C355	96.1 - 162.6	-18.2 - -2.5				
68/12/15	C435 - C630	186.8 - 256.3	3.2 - 19.5				
	C200 - C240	243.6 - 267.8	184.1 - 189.7				
68/12/16	C250 - C320	273.9 - 25.7	151.1 - 216.5				
	C600 - C655	28.7 - 62.0	217.9 - 225.6				
68/12/17	C200 - C320	34.2 - 88.6	23.2 - 41.0				
	C340 - C445	94.6 - 206.4	42.4 - 68.5				
68/12/18	C150 - C310	178.6 - 190.7	229.3 - 232.2		0335 - 0425	242.1 - 472.3	244.2 - 251.2
	C325 - C700	236.1 - 6.0	242.8 - 273.2		0325 - 0555	308.6 - 326.7	255.7 - 264.0
68/12/19	0300 - C700	11.5 - 156.6	83.5 - 117.2		0450 - 0545	78.0 - 111.2	99.0 - 106.7
68/12/20	0140 - C155	113.6 - 122.7	274.9 - 277.0				
	C335 - C720	183.2 - 319.2	291.2 - -36.8		0445 - 0535	225.5 - 255.7	301.2 - 308.3
68/12/21	C135 - C320	261.2 - 324.6	118.1 - 132.8				
	C335 - C645	333.7 - 88.6	134.9 - 161.6				
68/12/23	C410 - C720	295.9 - 50.8	186.3 - 213.0				

DATE		TIME(UT)	OBSERVATIONS		16.7		GRAND CANARY IS.. SPAIN		ACTIVITY		IO PHASE
YY/MM/DD		HHMM - HHMM	CML III		IC PHASE	TIME(UT)			CML III		
68/12/24		C430 - C720	58.6 - 207.4		33.4 - 56.8						
68/12/25		C340 - C725	218.9 - 354.9		228.8 - 260.7	0610 - 0725	309.6 - 354.9			250.0 - 260.7	
68/12/26		0125 - C125 C145 - C725	287.8 - 293.9 299.9 - 145.4		54.1 - 55.5 56.9 - 104.8	0355 - 0505 0645 - 0725	18.5 - 60.8 121.3 - 145.4			75.3 - 85.1 59.1 - 104.8	
68/12/27		C300 - C340 C420 - C555	135.8 - 160.0 184.2 - 241.6		270.1 - 275.8 281.5 - 295.0						
68/12/28		0115 - C200 0210 - 0345 C440 - C725	222.9 - 250.1 256.1 - 313.5 59.3 - 92.6		55.4 - 105.7 107.1 - 120.4 144.9 - 152.6						
68/12/29		C110 - 0155 0230 - 0350 C450 - C725	10.4 - 37.6 58.8 - 107.1 143.4 - 237.1		301.7 - 308.1 -46.9 - -35.5 -27.0 - -4.9						
68/12/30		C455 - C615 C630 - C725	297.0 - 345.3 354.4 - 15.6		176.7 - 188.0 150.1 - 195.0	0555 - 0615	333.2 - 345.3			185.2 - 188.0	
68/12/31		C130 - C745	323.6 - 190.3		-8.2 - 45.0						
69/01/01		0055 - C245 C305 - C725	93.0 - 159.5 171.6 - 334.8		189.6 - 205.1 207.9 - 246.1	0600 - 0735	277.4 - 334.8			232.6 - 246.1	
69/01/02		C420 - C720	7.5 - 116.3		62.9 - 88.2	0655 - 0720	101.2 - 116.3			84.7 - 88.2	
69/01/03		C235 - C750	94.6 - 285.0		250.6 - 295.4	0615 - 0635	227.6 - 239.7			281.9 - 284.7	
69/01/04		0335 - C725 C715 - C725	281.4 - 48.4 54.4 - 66.5		103.2 - 132.6 134.0 - 136.9						
69/01/05		C030 - C725	320.2 - 211.1		280.1 - -20.8						
69/01/06		C315 - C545	210.5 - 301.2		146.9 - 168.0						

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	16.7		GRAND CANARY IS., SPAIN		ACTIVITY CML III	IO PHASE	TIME(UT) HHMM - HHMM	IO PHASE
69/01/06	C555 - C610	307.2 - 316.2		169.4 - 171.5						
	C620 - C655	322.3 - 343.5		172.9 - 177.8						
69/01/07	0025 - C125	255.3 - 254.6		-33.3 - -24.8						
	C135 - C325	300.6 - 7.1		-23.4 - -7.7						
	C555 - C700	97.8 - 137.1		13.6 - 22.8						
69/01/09	0400 - C420	329.5 - 341.5		44.3 - 47.1						
	C435 - C455	350.6 - 2.7		49.3 - 52.1						
	C520 - C545	17.8 - 32.9		55.6 - 59.1						
69/01/11	0410 - C550	276.7 - 337.1		92.5 - 106.5						
69/01/12	C300 - C520	208.6 - 299.3		67.1 - 88.2						
69/01/19	0440 - C705	59.7 - 147.3		284.2 - 304.9						
69/01/20	C255 - C320	146.8 - 161.9		113.1 - 116.6						
	C335 - C710	171.0 - 301.0		118.7 - 148.8						
69/01/21	0110 - C150	233.9 - 258.1		301.7 - 307.4						
	C350 - C520	330.7 - 25.1		-35.5 - -22.7						
69/01/22	0100 - 0200	18.5 - 54.8		143.6 - 152.0						
	C300 - C355	91.1 - 124.3		160.4 - 168.2						
	0430 - C500	145.5 - 163.6		173.1 - 177.3						
	C510 - C535	164.7 - 184.8		178.7 - 182.2						
	C640 - C720	224.1 - 248.3		191.4 - 197.0						
69/01/23	C000 - C040	132.9 - 157.0		-20.9 - -15.2						
	0120 - C345	181.2 - 268.9		-9.5 - 11.1						
69/01/24	C440 - C505	92.8 - 107.9		221.5 - 225.0						
	C530 - C550	123.0 - 135.1		228.5 - 231.4						
	C705 - C730	180.4 - 195.6		242.0 - 245.6						
				0715 - 0730	186.5 - 195.6	243.4 - 245.6				

DATE YY/MM/CD	TIME(UT) HHMM - HHMM	16.7		OBSERVATIONS CML III	GRAND CANARY IS., SPAIN		TIME(UT) HHMM - HHMM	ACTIVITY CML III	IO PHASE
		IC PHASE							
69/01/25	0325 - 0325 0440 - 0425	198.1 - 216.2 243.4 - 252.5	55.3 - 59.5 65.8 - 67.9						
69/01/26	0300 - 0625 0630 - 0620	333.6 - 97.5 103.6 - 112.6	254.5 - 283.7 285.1 - 287.3			0300 - 0340	333.6 - 357.8	254.5 - 260.2	
69/01/27	0300 - 0800	124.2 - 305.6	58.5 - 140.5			0300 - 0345	124.2 - 151.4	98.5 - 104.8	
69/01/28	0325 - 0400	290.0 - 311.1	305.5 - -49.5						
69/01/29	0015 - 0030 0120 - 0255 0310 - 0415 0425 - 0550	325.7 - 334.8 5.0 - 62.5 71.5 - 110.8 116.9 - 168.3	122.0 - 124.1 131.1 - 144.5 146.6 - 155.7 157.1 - 169.0						
69/01/30	0315 - 0550	225.2 - 318.9	-8.5 - 13.5						
69/01/31	0310 - 0445 0515 - 0550	12.8 - 70.3 88.4 - 109.6	193.4 - 206.9 211.1 - 216.1						
69/02/01	0130 - 0155 0205 - 0440 0500 - 0550	103.0 - 118.1 124.2 - 217.9 230.0 - 260.2	23.8 - 27.3 28.7 - 50.6 53.4 - 60.4			0515 - 0540	239.0 - 254.2	55.5 - 59.0	
	0715 - 0735	311.6 - 323.7	72.4 - 75.2						
69/02/02	0245 - 0400 0510 - 0800	295.0 - 344.3 26.7 - 129.5	237.1 - 247.7 257.7 - 281.9			0305 - 0400	311.1 - 344.3	239.9 - 247.7	
69/02/03	0600 - 0635	345.9 - 228.7	58.1 - 113.5			0305 - 0440	101.7 - 159.2	84.0 - 57.4	
69/02/04	0150 - 0650	207.1 - 28.4	276.7 - -40.6			0445 - 0505	312.9 - 325.0	301.6 - 304.5	
69/02/05	0245 - 0325 0350 - 0425 0435 - 0655	31.0 - 55.1 70.3 - 91.4 97.5 - 162.1	127.9 - 133.6 137.1 - 142.0 143.4 - 163.1						

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	OBSERVATIONS CML III	GRAND CANARY IS.. SPAIN		ACTIVITY CML III	IO PHASE
			IC PHASE	TIME(UT) HHMM - HHMM		
65/02/06	C115 - C300 C335 - C545	127.2 - 190.7 211.9 - 290.5	-40.8 - -25.9 -20.9 - -2.4			
69/02/07	C145 - C745	296.0 - 153.7	166.3 - 217.2	0215 - 0300	314.1 - 341.3	170.5 - 176.9
69/02/08	C240 - C350 C505 - C710	119.9 - 162.2 207.6 - 283.2	18.6 - 28.4 39.0 - 56.6			
69/02/09	C210 - C640	252.4 - 55.7	217.0 - 255.3	0325 - 0630	297.8 - 49.6	227.6 - 253.9
65/02/10	C415 - C450 C635 - C725	118.7 - 139.9 203.3 - 233.6	78.8 - 83.8 98.5 - 105.5			
69/02/11	C215 - C250	196.8 - 218.0	265.1 - 270.1			
69/02/12	C220 - C345 C405 - C445 C515 - C535 C545 - C700	350.5 - 41.9 54.0 - 78.2 56.3 - 108.4 114.4 - 155.8	109.5 - 121.4 124.2 - 129.8 134.0 - 136.8 138.2 - 148.8			
69/02/13	C330 - C400	183.5 - 201.6	-36.7 - -32.4			
69/02/14	C345 - C615	343.2 - 73.9	168.3 - 189.4			
65/02/15	C525 - C700	194.4 - 251.8	26.9 - 40.3			
69/02/16	C500 - C700	329.9 - 42.5	226.1 - 243.1	0520 - 0555	342.0 - 3.2	228.9 - 233.9
69/02/17	C315 - C350 C505 - C550	57.1 - 78.3 123.6 - 150.8	55.5 - 60.5 71.0 - 77.3			
69/02/18	C125 - C550 C610 - C640 C655 - C720	141.3 - 301.5 313.6 - 331.8 340.9 - 355.9	243.0 - 280.7 283.6 - 267.8 290.0 - 293.5	0415 - 0510	244.1 - 277.3	267.2 - 275.0
69/02/19	C125 - C240	292.0 - 337.3	66.9 - 97.4			

DATE YY/MM/DD	TIME(UT) HHMM - HHMM	16.7 GRAND CANARY IS.. SPAIN		OBSERVATIONS CML III	IO PHASE	TIME(UT) HHMM - HHMM	ACTIVITY CML III	IO PHASE
		16.7						
69/02/15	C510 - C545 C552 - C700	68.0 - 89.2 95.2 - 134.5	118.5 - 123.4 124.8 - 133.9					
69/02/20	C320 - C400 C450 - C510 C525 - C625	152.2 - 176.4 206.6 - 216.7 227.8 - 264.1	306.9 - 47.4 -40.3 - 37.4 -35.3 - 26.8					
69/02/23	C250 - C325	226.1 - 265.4	152.7 - 202.0					
69/02/25	C200 - C310 C325 - C410	137.2 - 179.6 188.6 - 215.9	233.0 - 243.0 245.1 - 251.5					
69/02/26	C150 - C250 C310 - C420	281.9 - 318.2 330.3 - 18.6	75.7 - 84.1 86.9 - 58.1			0230 - 0250	306.1 - 318.2	81.3 - 84.1
69/02/27	C200 - C225 C315 - C400	78.6 - 59.8 124.0 - 151.2	280.6 - 285.6 291.3 - 297.7					
69/02/28	C235 - C405	250.5 - 304.9	128.8 - 141.5					
69/03/01	0110 - C155 0210 - C245 0320 - C405	349.8 - 17.0 26.1 - 47.2 66.4 - 55.6	-38.9 - 32.5 -30.4 - 25.4 -20.5 - 14.1					
69/03/02	0145 - C300	161.6 - 207.0	168.8 - 179.4					
69/03/04	C205 - C235	115.1 - 133.2	219.0 - 223.2					
69/03/06	C135 - C250 0325 - C415	36.3 - 63.7 104.9 - 135.1	262.3 - 272.9 277.9 - 285.1					
69/03/07	C140 - C335	192.1 - 261.6	106.5 - 122.6					
69/03/08	0210 - C305	C.9 - 34.1	-45.2 - 37.3					
69/03/09	C115 - C405	118.3 - 221.1	149.9 - 173.9					

DATE		TIME(UT)	OBSERVATIONS	16.7 GRAND CANARY IS., SPAIN		ACTIVITY	IO PHASE
YY/MM/DD	HHMM - HHMM	HHMM - HHMM	CML III	IO PHASE	TIME(UT)	CML III	
					HHMM - HHMM		
69/03/10	C15C - C330		290.2 - 350.6	-0.6 - 13.5			
69/03/11	C310 - C350		129.2 - 133.4	213.5 - 219.1			
69/03/13	C120 - C430		4.1 - 119.0	245.4 - 272.5	0145 - 0220	19.2 - 40.4	248.9 - 253.9
69/03/14	C005 - C055		109.5 - 139.7	78.6 - 85.6			
	C115 - C245		151.8 - 206.2	68.4 - 101.0	0125 - 0210	157.8 - 185.0	89.8 - 96.1
69/03/17	C330 - C410		325.5 - 349.6	-1.1 - 4.5			
69/03/19	C135 - C155		157.3 - 205.4	29.8 - 32.6			
	C205 - C240		215.4 - 236.6	34.0 - 38.9			
69/03/20	C035 - C145		311.7 - 354.0	224.2 - 234.2			
69/03/21	C240 - C300		178.0 - 190.1	65.8 - 68.6			
	C540 - C610		286.8 - 304.9	111.0 - 115.2			
69/03/24	C000 - C0510		173.3 - 0.7	314.5 - -1.6			
69/03/25	C040 - C230		348.1 - 54.6	162.9 - 178.4	0040 - 0145	348.1 - 27.4	162.9 - 172.1
69/03/26	2250 - 2350		222.9 - 255.2	154.6 - 203.1			
69/03/31	2215 - 2235		235.1 - 247.2	127.8 - 130.6			
	2245 - 2300		253.2 - 262.3	132.0 - 134.1			
	2310 - C050		268.4 - 178.2	135.5 - 306.9			
69/04/03	2350 - C050		24.5 - 270.1	32.7 - 196.9			
69/04/04	0120 - C320		78.9 - 151.5	45.4 - 62.2			
69/04/21	2245 - 2400		176.4 - 221.8	67.7 - 98.2			

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_____ "Decameter Wavelength Observations of Jupiter, October 1966 - March 1967," GSFC Rept. X-615-67-531 (October 1967).

Warwick, J.W. and Dulk, G.A., "Observations of Jupiter's Sporadic Radio Emission in the Range 7.6-41 MHz, 6 July 1966 through 8 September 1968," World Data Center A Rept. UAG-3 (November 1968).

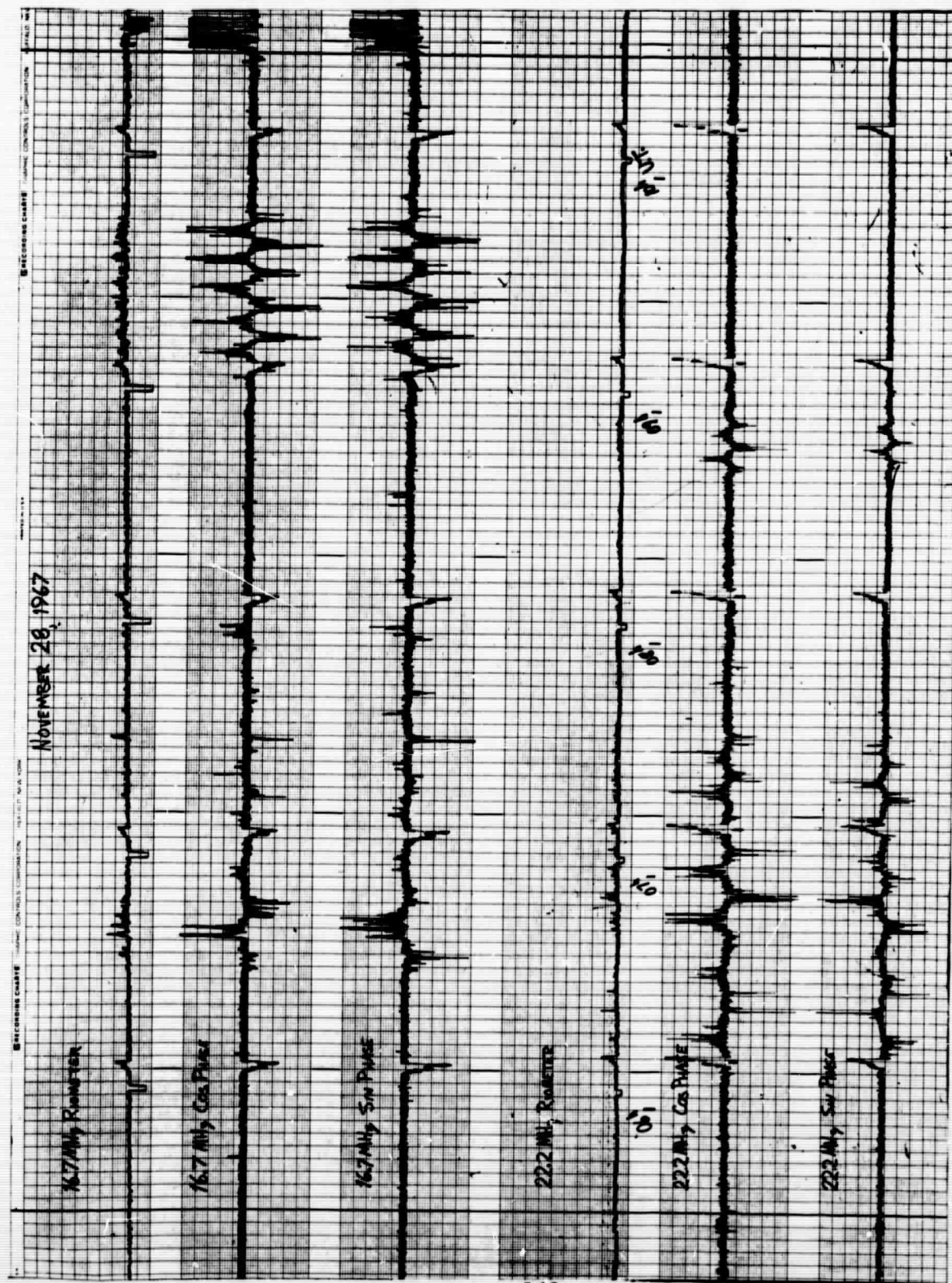


Fig. 1 - Sample Jupiter Monitor Network data recording.

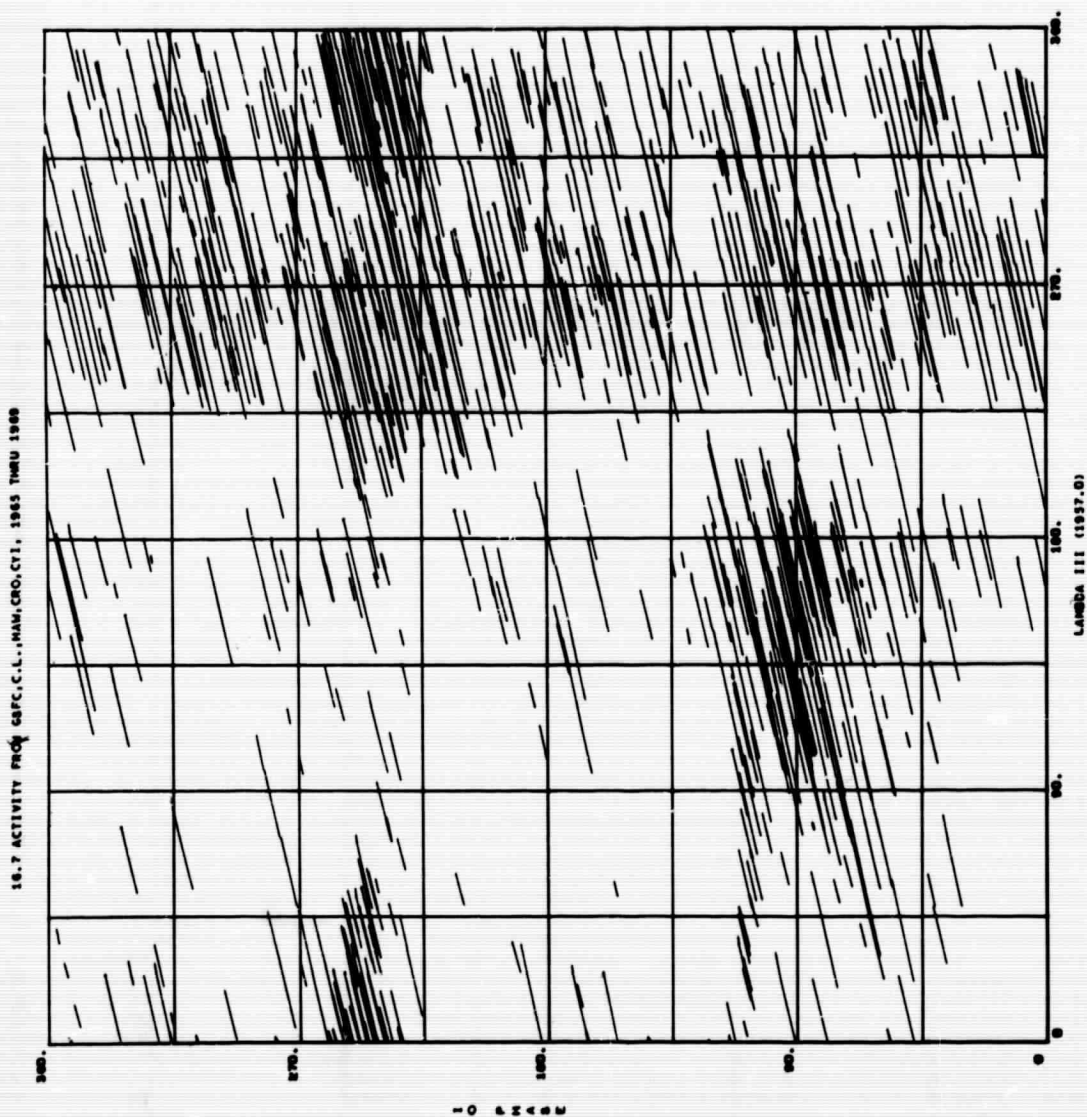


Fig. 2 - Plot of all 16.7 MHz activity as a function of
System III (1957.0) Central Meridian Longitude
and departure of the satellite Io from superior
geocentric conjunction.

16.7 OBSERVATION FROM GSPC, C.A., HAWAII, CTO, 1963 THRU 1968

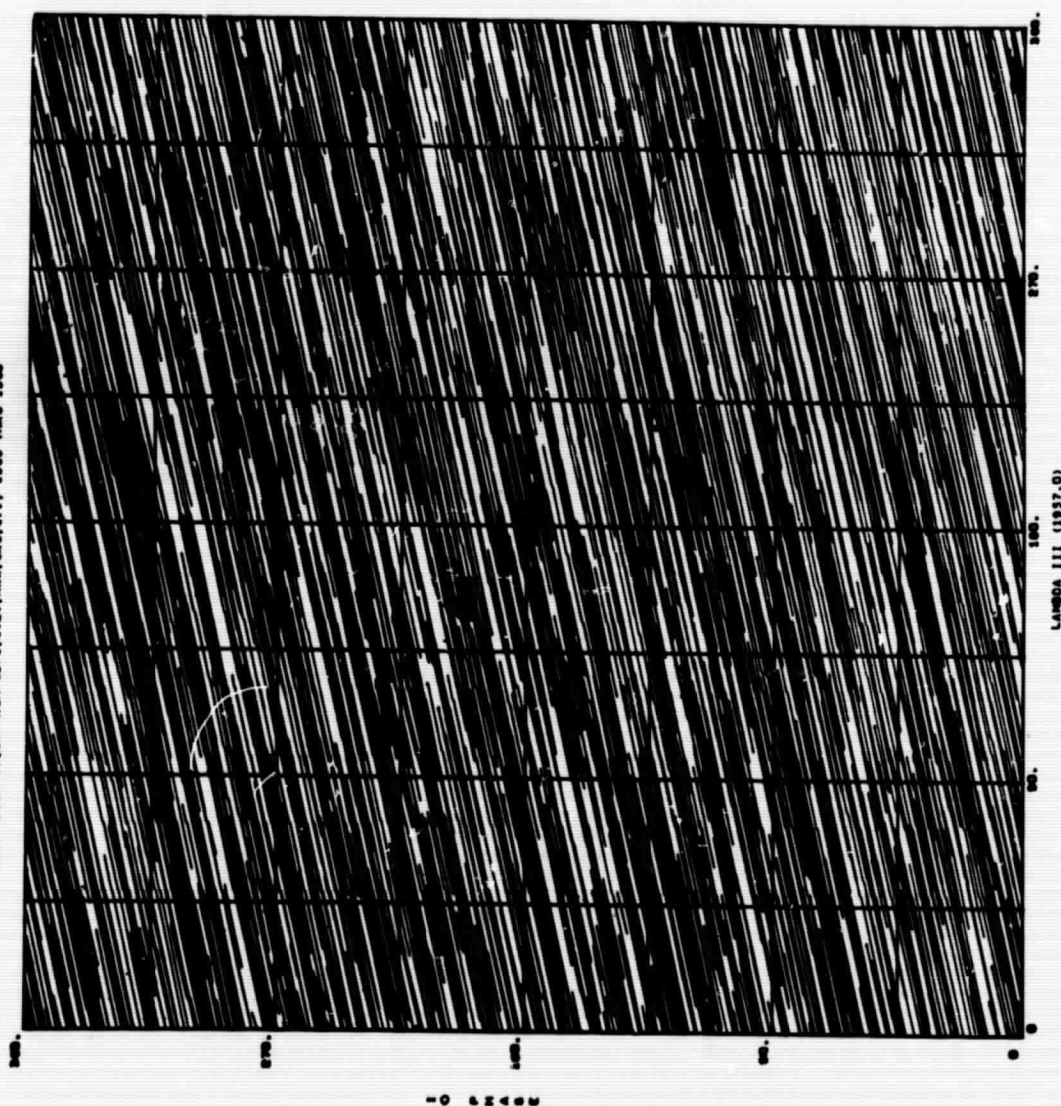


Fig. 3 - Plot of all 16.7 MHz observations as a function of System III (1957.0) Central Meridian Longitude and departure of the satellite from superior geocentric conjunction.

22.2 ACTIVITY FROM 63FC, C.L., HAW, CRO, 1965 THRU 1969

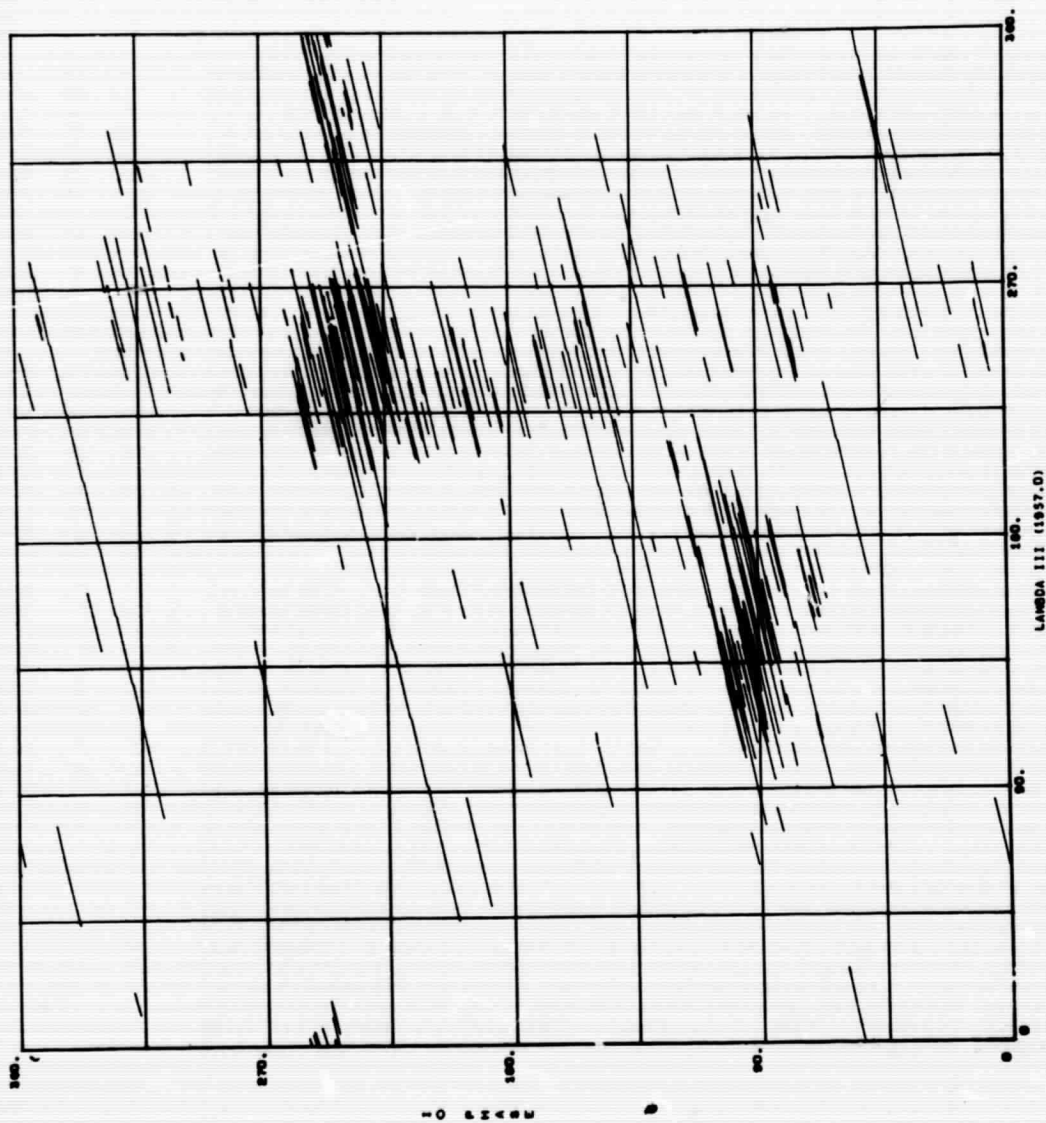


Fig. 4 - plot of all 22.2 MHz activity as a function of
System III (1957.0) Central Meridian Longitude
and departure of the satellite Io from superior
geocentric conjunction.

22.2 OBSERVATIONS FROM GAFIC.I.L..NAM.CRO, 1965 THRU 1966

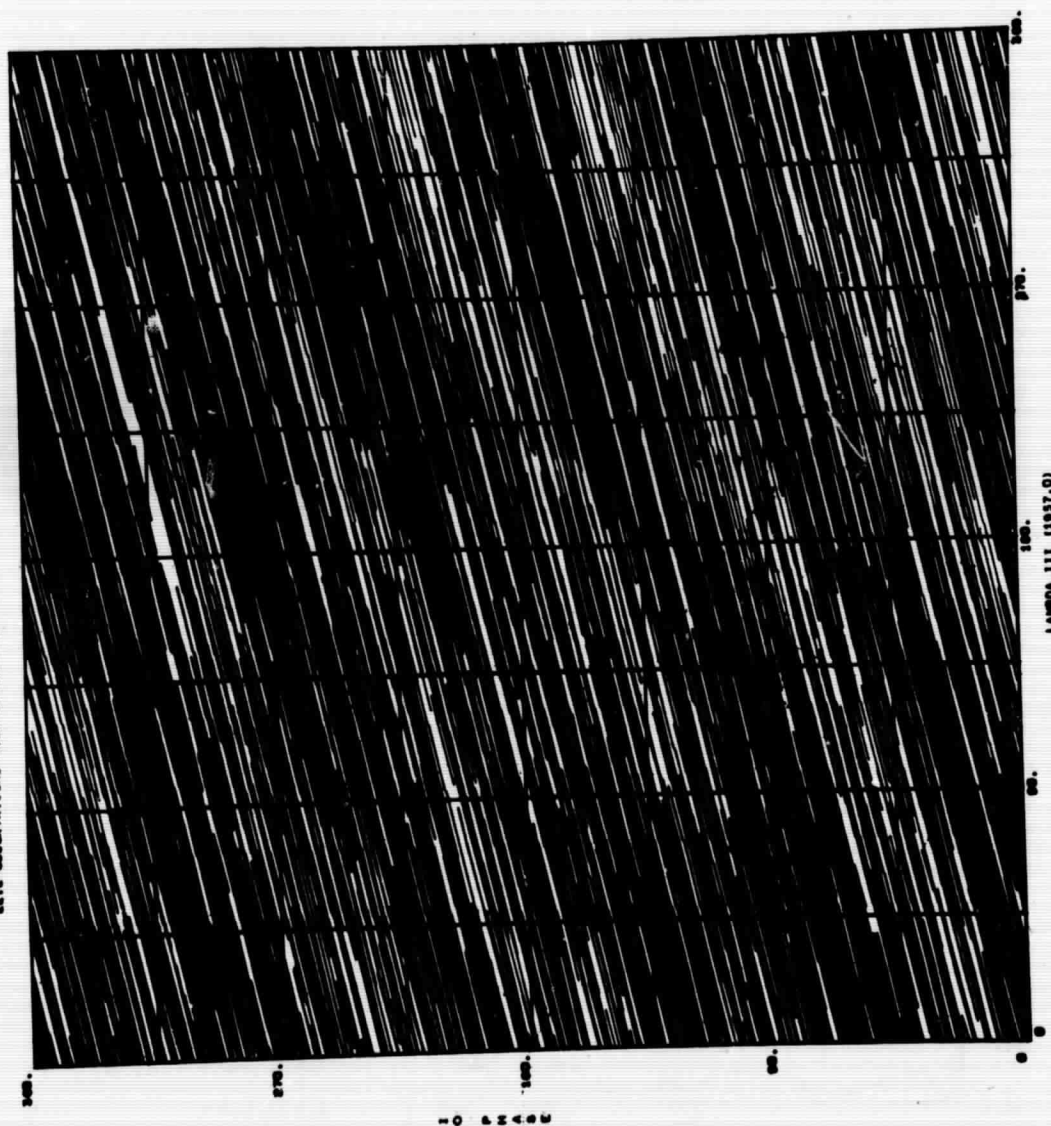


Fig. 5 - Plot of all 22.2 MHz observations as a function of
System III (1957.0) Central Meridian Longitude
and departure of the satellite λ_0 from superior
geocentric conjunction.

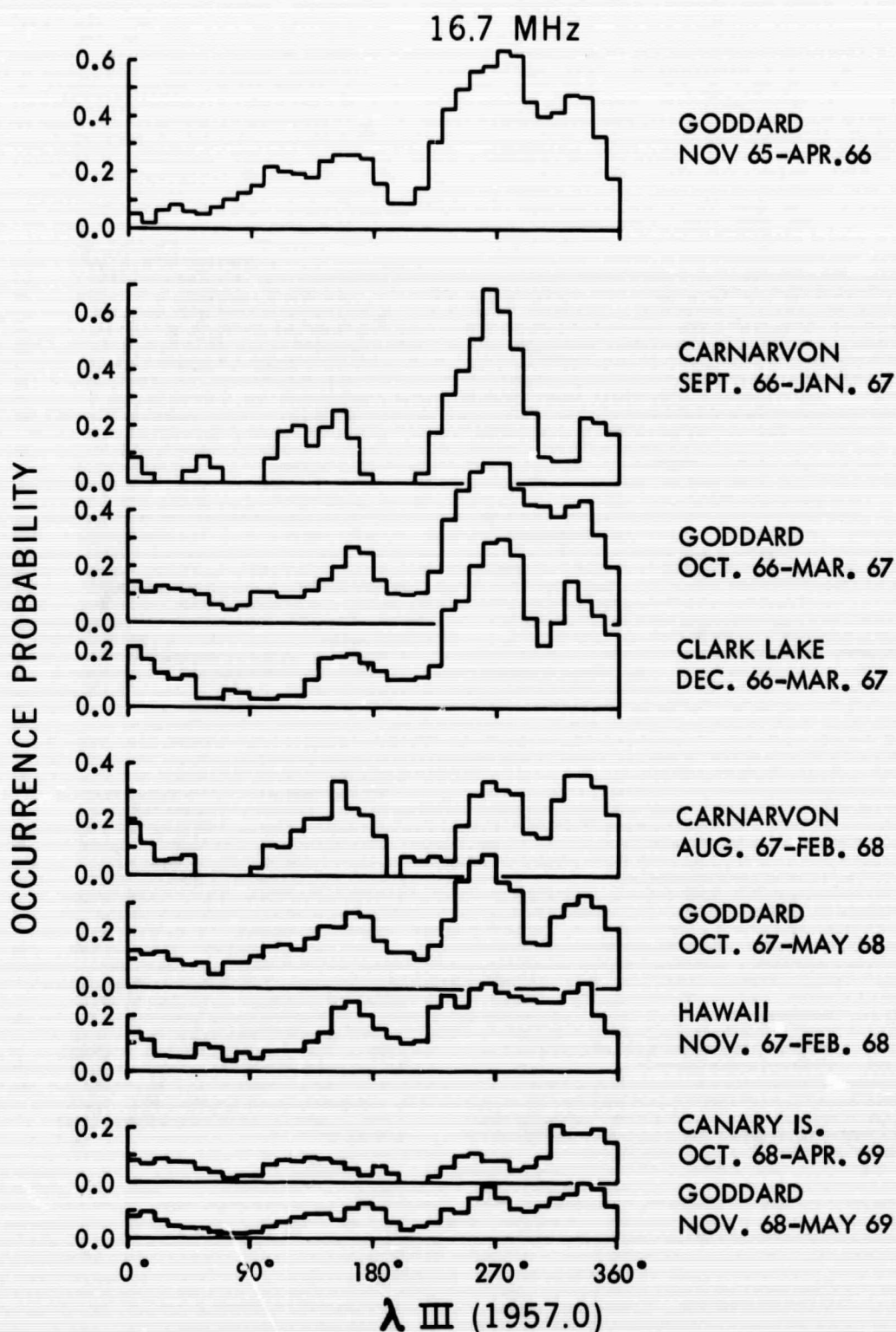


Fig. 6 - Variation of 16.7 MHz occurrence probability with
System III (1957.0) Central Meridian Longitude

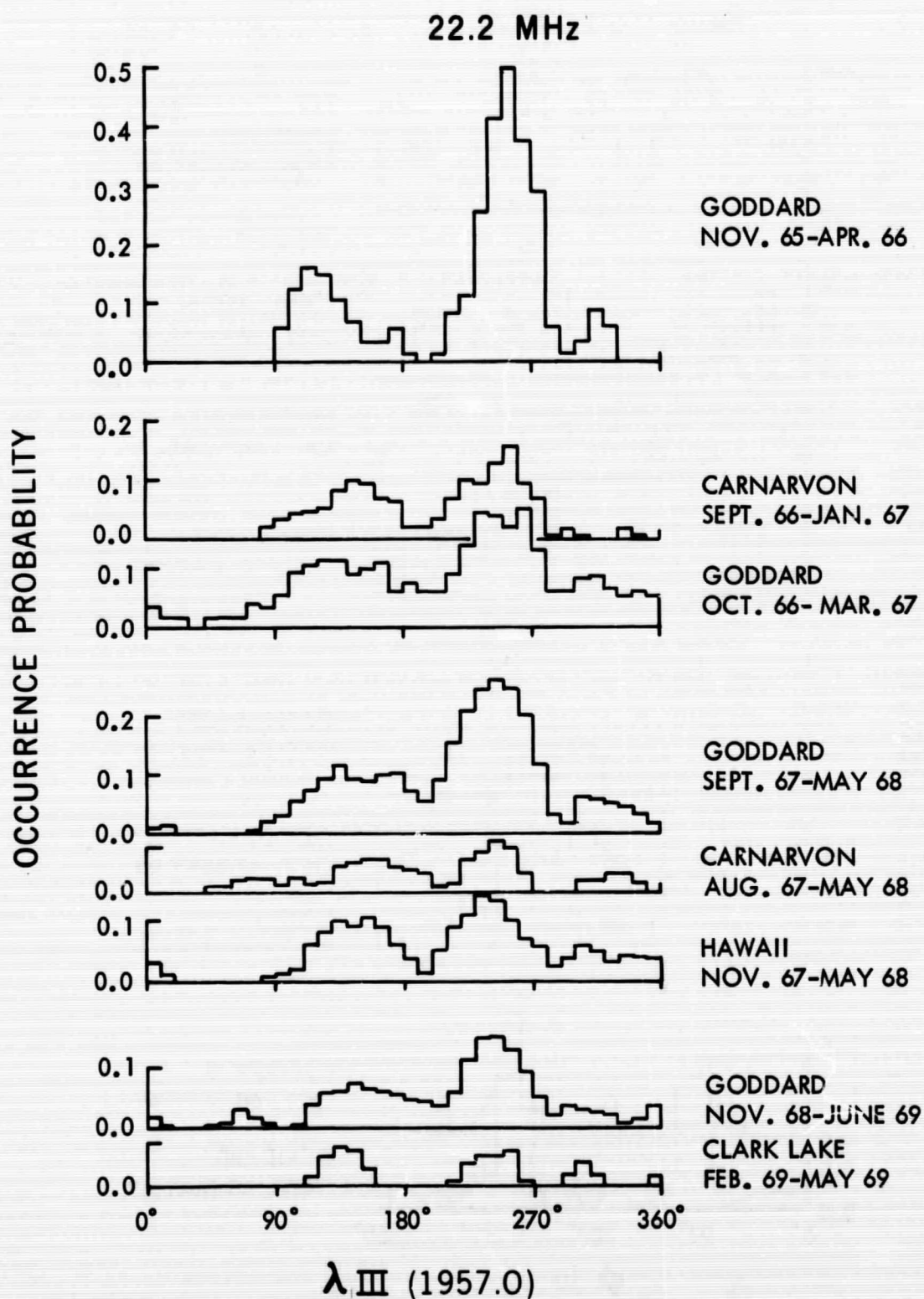


Fig. 7 - Variation of 22.2 MHz occurrence probability with
System III (1957.0) Central Meridian Longitude.

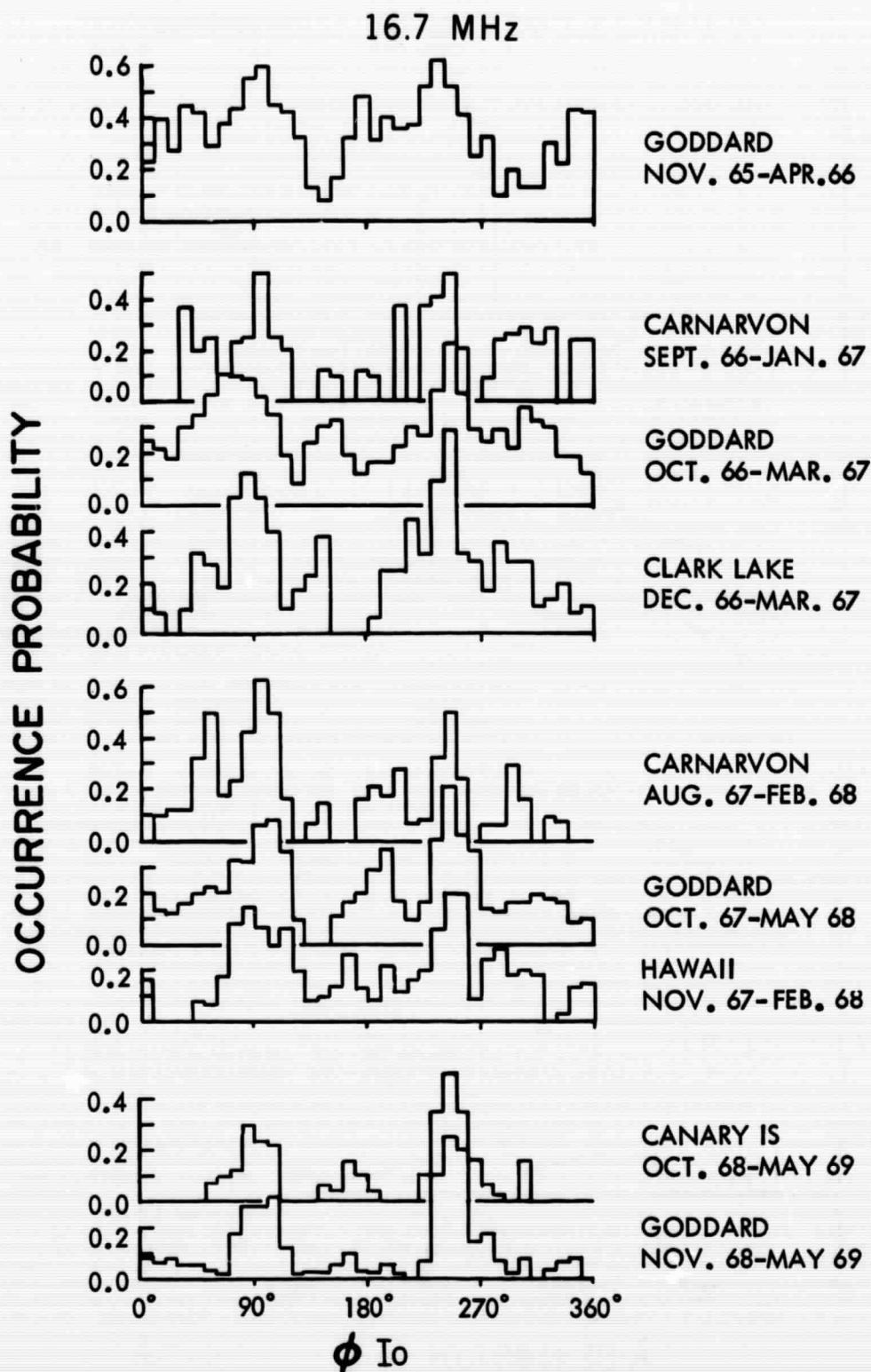


Fig. 8 - Variation of 16.7 MHz occurrence probability with departure of the satellite Io from superior geocentric conjunction.

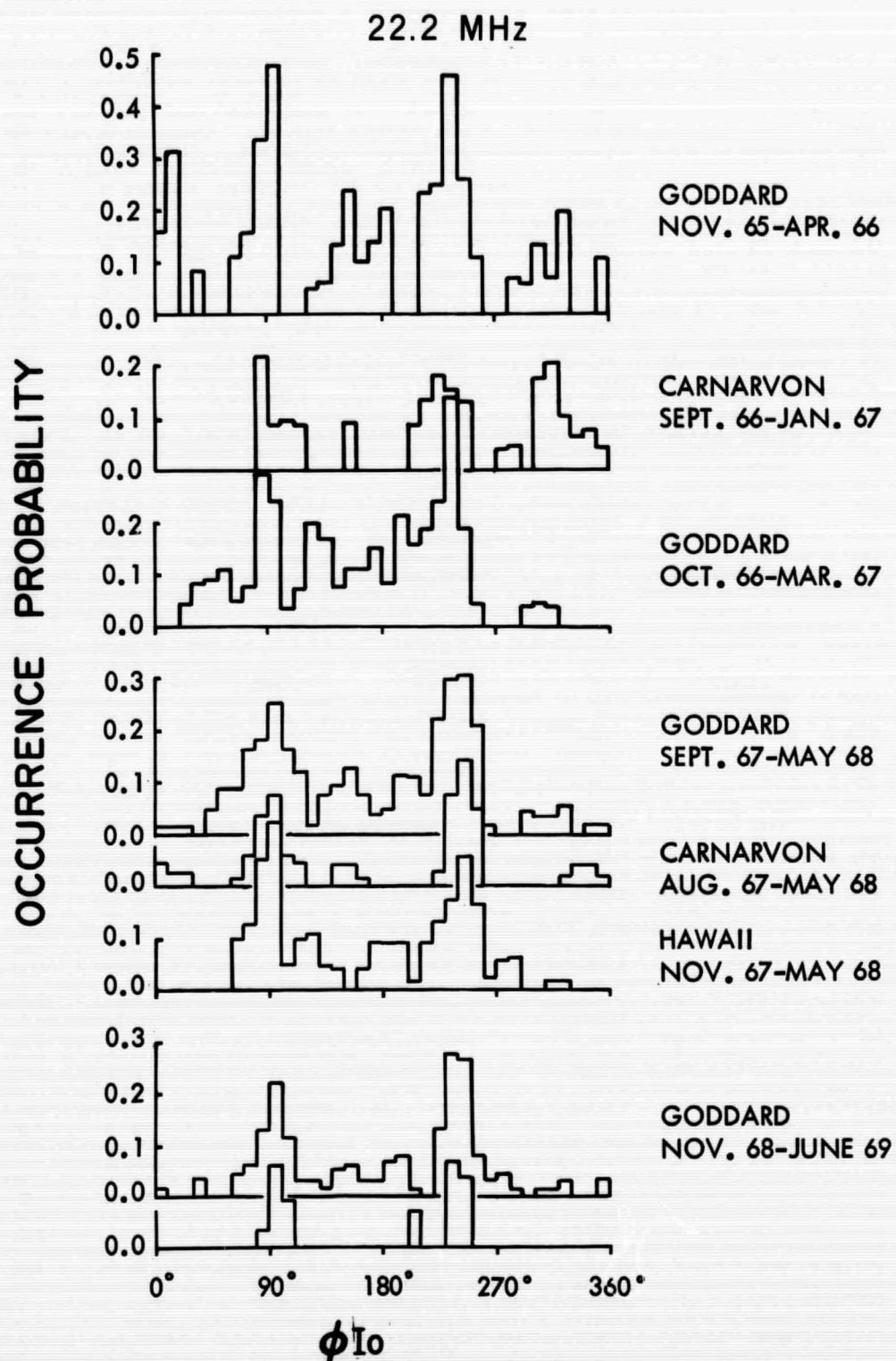


Fig. 9 - Variation of 22.2 MHz occurrence probability with departure of the satellite Io from superior geocentric conjunction.